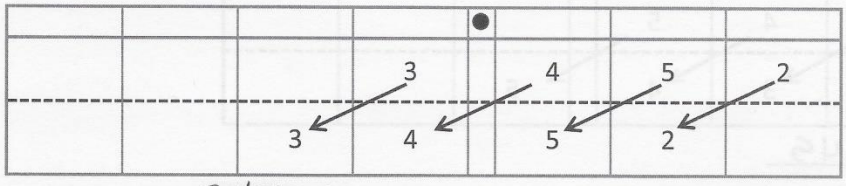
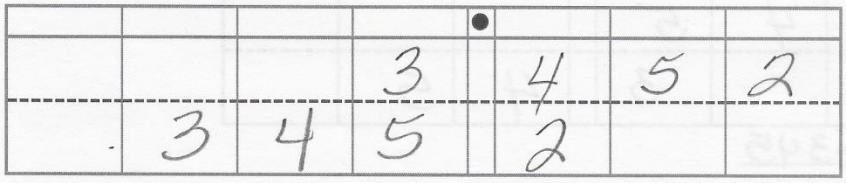
Name _____ Date _____

1. Use the place value chart and arrows to show how the value of the each digit changes. The first one has been done for you.

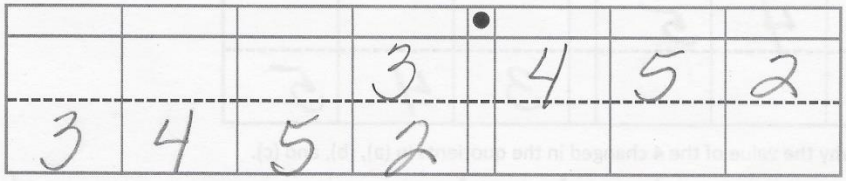
   a. 3.452 × 10 = 34.52



   b. 3.452 × 100 = 345.2



   c. 3.452 × 1,000 = _____



   d. Explain how and why the value of the 5 changed in (a), (b), and (c).

In a) 5 goes from hundredths to tenths because the number 3.452 was multiplied by 10.

In b) 5 goes from hundredths to ones. because the number 3.452 was multiplied by 100.

In c) 5 goes from hundredths to tens because the number 3.452 was multiplied by 100.

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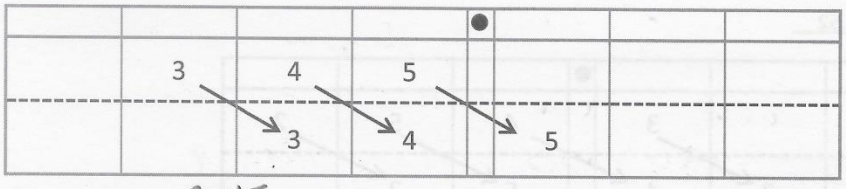
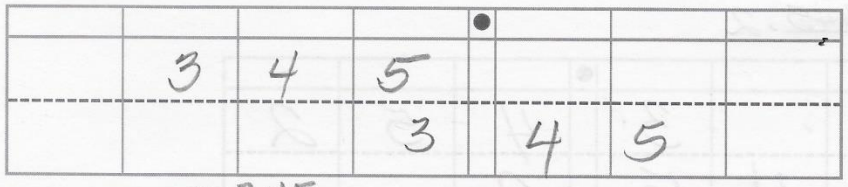
2. Use the place value chart and arrows to show how the value of each digit changes. The first one has been done for you.

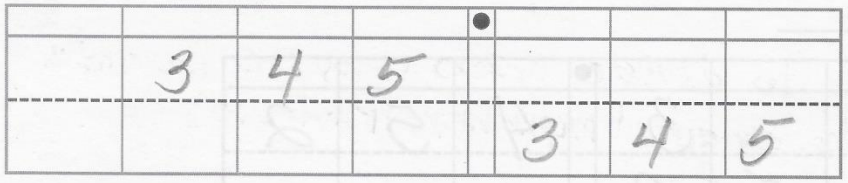
a. 345 ÷ 10 = 34.5



b. 345 ÷ 100 = 3.45



c. 345 ÷ 1,000 = 0.345



d. Explain how and why the value of the 4 changed in the quotients in (a), (b), and (c).

In a) When 345 is divided by 10, the value of 4 goes from 40 to 4.

In b) 345 is divided by 100, so the value of 4 goes from 40 to 0.4.

In c) 345 is divided by 1000, so the value of 4 goes from 40 to 0.04

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3. A manufacturer made 7,234 boxes of coffee stirrers. Each box contains 1,000 stirrers. How many stirrers did they make? Explain your thinking, and include a statement of the solution.

7,234 × 1000 = 7,234,000

Each box contains 1,000 coffe stirrers. So 7,234 boxes have to contain 7,234,000. There are 7,234,000 coffee stirrers

4. A student used his place value chart to show a number. After the teacher instructed him to multiply his number by 10, the chart showed 3,200.4. Draw a picture of what the place value chart looked like at first.

	3	2	0	.	0	4	

a. Explain how you decided what to draw on your place value chart. Be sure to include your reasoning about how the value of each digit was affected by the multiplication. Use words, pictures, or numbers.

I decided to divide 3,200.4 by 10 in order to find the original number that was multiplied by 10.

5. A microscope has a setting that magnifies an object so that it appears 100 times as large when viewed through the eyepiece. If a tiny insect is 0.095 cm long, how long will the insect appear in centimeters through the microscope? Explain how you know.

0.095 × 100 = 9.5 cm long

95 thousandths times a hundred becomes 9.5 cm long through the microscope

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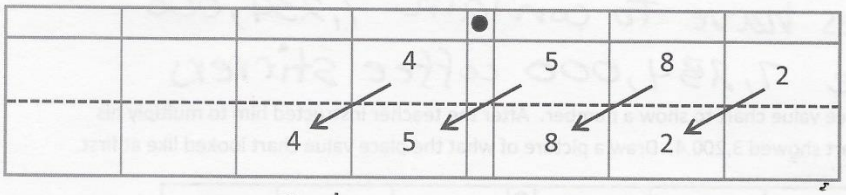
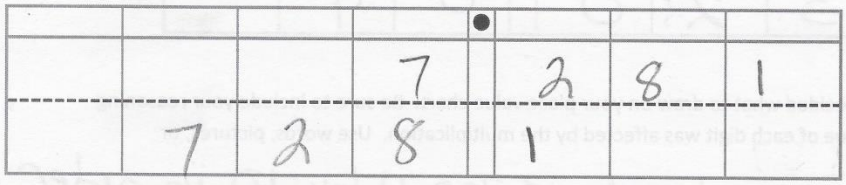
Name _____ Date _____

1. Use the place value chart and arrows to show how the value of each digit changes. The first one has been done for you.

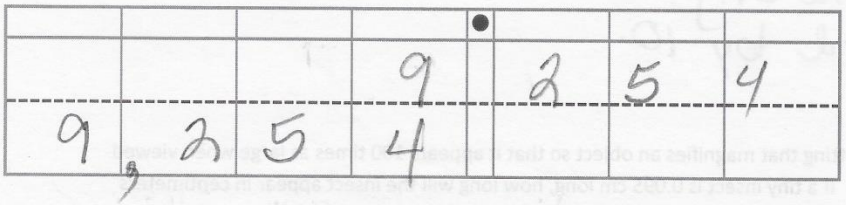
a. 4.582 × 10 = 45.82



b. 7.281 × 100 = 728.1



c. 9.254 × 1,000 = 9,254



d. Explain how and why the value of the 2 changed in (a), (b), and (c).

In a) 2 goes from thousandths to hundredths because it was multiplied by 10

In b) 2 goes from tenths to tens because it was multiplied by 100

In c) 2 goes from tenths to hundreds because it was multiplied by 100

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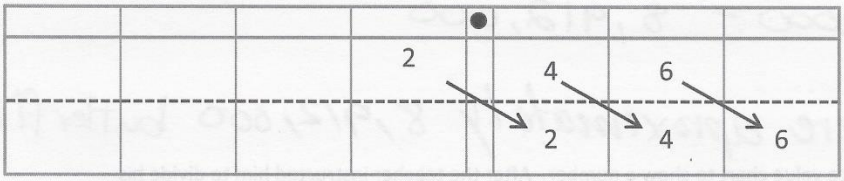
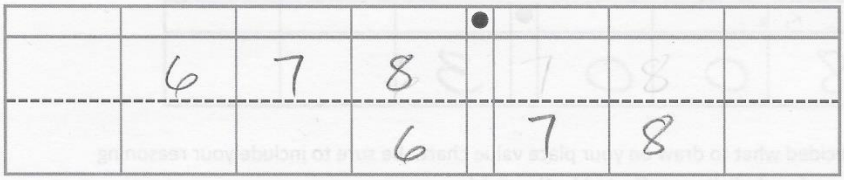
2. Use the place value chart and arrows to show how the value of each digit changes. The first one has been done for you.

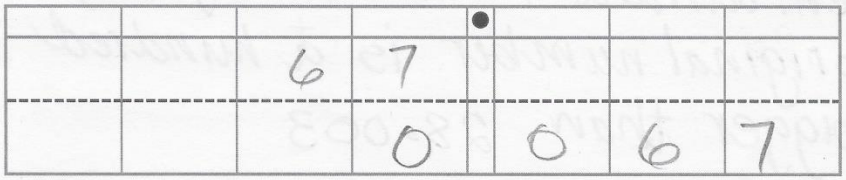
a. 2.46 ÷ 10 = 0.246



b. 678 ÷ 100 = 6.78



c. 67 ÷ 1,000 = 0.067



d. Explain how and why the value of the 6 changed in the quotients in (a), (b), and (c).

In a) 6 is divided by 10, so it goes from hundredths to thousandths.

In b) 6 is divided by 100, so it goes from hundreds to ones.

In c) 6 is divided by 1000, so it goes from tens to hundredths

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3. Researchers counted 8,912 monarch butterflies on one branch of a tree at a site in Mexico. They estimated that the total number of butterflies at the site was 1,000 times as large. About how many butterflies were at the site in all? Explain your thinking, and include a statement of the solution.

8,912 × 1000 = 8,912,000

There were approximately 8,912,000 butterflies.

4. A student used his place value chart to show a number. After the teacher instructed him to divide his number by 100, the chart showed 28.003. Draw a picture of what the place value chart looked like at first.

28.003 × 100 = 2800.3

2	8	0	0	•	3		

a. Explain how you decided what to draw on your place value chart. Be sure to include your reasoning about how the value of each digit was affected by the division.

The student divided the number by 100, so the original number is a hundred times bigger than 28.003

5. On a map, the perimeter of a park is 0.251 meters. The actual perimeter of the park is 1,000 times as large. What is the actual perimeter of the park? Explain how you know using a place value chart.

0.251 × 1,000 = 251

The perimeter is 251 m.

				0	•	2	5	1
−			2	5	1			

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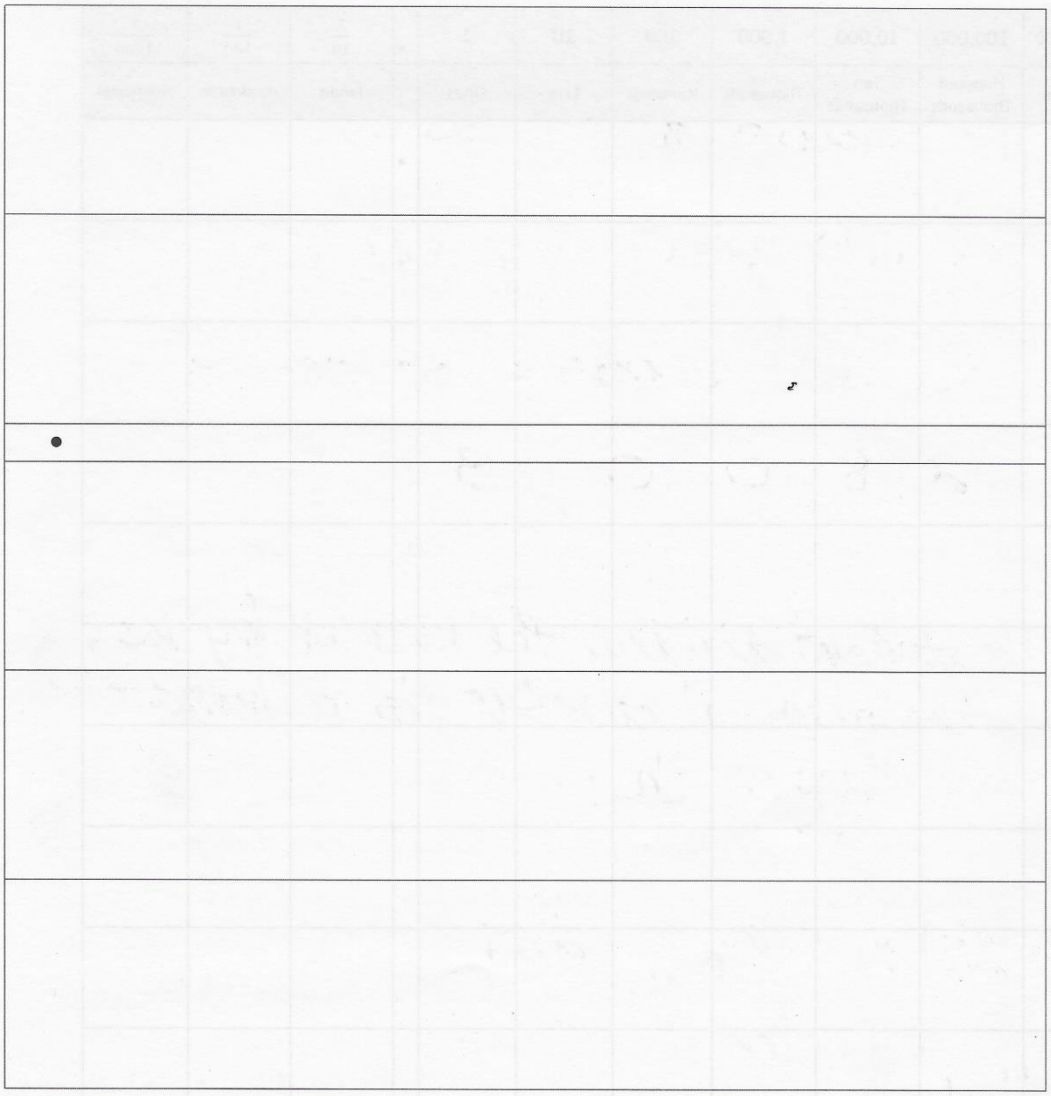

unlabeled hundreds through hundredths place value chart

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1,000,000	100,000	10,000	1,000	100	10	1	.	$\frac{1}{10}$	$\frac{1}{100}$	$\frac{1}{1000}$
Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones	.	Tenths	Hundredths	Thousandths
							.			
							.			
							.			

millions through thousandths place value chart

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Name _____ Date _____

1. Solve.

a. 54,000 × 10 = 540,000.

b. 54,000 ÷ 10 = 5,400.

c. 8.7 × 10 = 87.

d. 8.7 ÷ 10 = .87

e. 0.13 × 100 = 13.

f. 13 ÷ 1,000 = 0.013

g. 3.12 × 1,000 = 3,120.

h. 4,031.2 ÷ 100 = 40.312

2. Find the products.

a. 19,340 × 10 = 193,400

b. 19,340 × 100 = 1,934,000

c. 19,340 × 1,000 = 19,340,000

d. Explain how you decided on the number of zeros in the products for (a), (b), and (c).

The number of zeros of the factor 10, 100, or 1000 is the number of zeros I add to the other factor.

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3. Find the quotients.

   a. 152 ÷ 10 = 15.2

   b. 152 ÷ 100 = 1.52

   c. 152 ÷ 1,000 = 0.152

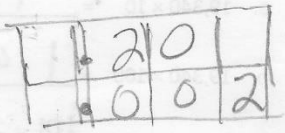
   d. Explain how you decided where to place the decimal in the quotients for (a), (b), and (c).

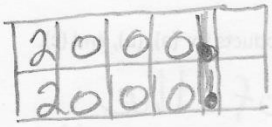
The number of zeroes of the divisor 10, 100, or 1000 is the number of places I move the decimal to the right

4. Janice thinks that 20 hundredths is equivalent to 2 thousandths because 20 hundreds is equal to 2 thousands. Use words and a place value chart to correct Janice's error.

0.20 ≠ 0.002

2,000 = 2,000





5. Canada has a population that is about $\frac{1}{10}$ as large as the United States. If Canada's population is about 32 million, about how many people live in the United States? Explain the number of zeros in your answer.

32,000,000 × 10 = 320,000,000

There are 320,000,000

There are 7 zeros because I added one more zero when I multiplied by 10

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Name _____ Date _____

1. Solve.

a. 36,000 × 10 = 360,000

b. 36,000 ÷ 10 = 3,600

c. 4.3 × 10 = 43

d. 4.3 ÷ 10 = 0.43

e. 2.4 x 100 = 240

f. 24 ÷ 1,000 = 0.024

g. 4.54 × 1,000 = 4,540

h. 3,045.4 ÷ 100 = 30.454

2. Find the products.

a. 14,560 × 10 = 145,600

b. 14,560 × 100 = 1,456,000

c. 14,560 × 1,000 = 14,560,000

Explain how you decided on the number of zeros in the products for (a), (b), and (c).

When I multiplied by 10, I added one zero.
When I multiplied by 100, I added two zeroes
When I multiplied by 1,000, I added three zeroes.

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3. Find the quotients.

   a. $1.65 \div 10 =$ 0.165

   b. $1.65 \div 100 =$ 0.0165

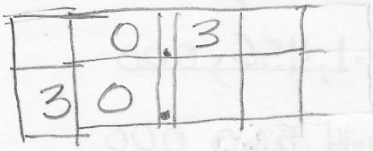
   c. Explain how you decided where to place the decimal in the quotients for (a) and (b).

In a), I moved the decimal point one place to the left.

In b), I moved the decimal point two places to the left

4. Ted says that 3 tenths multiplied by 100 equals 300 thousandths. Is he correct? Use a place value chart to explain your answer.

$0.3 \times 100 = 30$



5. Alaska has a land area of about 1,700,000 square kilometers. Florida has a land area $\frac{1}{10}$ the size of Alaska. What is the land area of Florida? Explain how you found your answer.

1,700,000 ÷ 10 = 170,000

The area of Florida is 170,000 square kilometers

I divided the area of Alaska by 10 to get the area of Florida

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Name _____ Date _____

1. Write the following in exponential form (e.g., $100 = 10^2$).

a. $10{,}000 =$ 10^4

b. $1{,}000 =$ 10^3

c. $10 \times 10 =$ 10^2

d. $100 \times 100 =$ 10^4

e. $1{,}000{,}000 =$ 10^6

f. $1{,}000 \times 1{,}000 =$ 10^6

2. Write the following in standard form (e.g., $5 \times 10^2 = 500$).

a. $9 \times 10^3 =$ 9,000

b. $39 \times 10^4 =$ 390,000

c. $7{,}200 \div 10^2 =$ 72

d. $7{,}200{,}000 \div 10^3 =$ 7,200

e. $4.025 \times 10^3 =$ 4,025,000

f. $40.25 \times 10^4 =$ 402,500

g. $72.5 \div 10^2 =$ 0.725

h. $7.2 \div 10^2 =$ 0.072

3. Think about the answers to Problem 2(a–d). Explain the pattern used to find an answer when you multiply or divide a whole number by a power of 10.

When multiplying or dividing by a power of 10, I move the decimal point as many places as the exponent indicates to the right or to the left.

4. Think about the answers to Problem 2(e–h). Explain the pattern used to place the decimal in the answer when you multiply or divide a decimal by a power of 10.

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5. Complete the patterns.

a. 0.03 0.3 3 30 300 3,000

b. 6,500,000 65,000 650 6.5 0.065

c. 94,300 9,430 943 94.3 9.43 0.943

d. 999 9990 99,900 999,000 9,990,000 99,900,000

e. 0.75 7.5 750 75,000 750,000 7,500,000

f. Explain how you found the unknown numbers in set (b). Be sure to include your reasoning about the number of zeros in your numbers and how you placed the decimal.

I eliminated two zeroes in the first one. In the second one I moved the decimal point two places to the left.

g. Explain how you found the unknown numbers in set (d). Be sure to include your reasoning about the number of zeros in your numbers and how you placed the decimal.

I added one zero each time. I moved the decimal point to the right once each time.

6. Shaunnie and Marlon missed the lesson on exponents. Shaunnie incorrectly wrote $10^5 = 50$ on her paper, and Marlon incorrectly wrote $2.5 \times 10^2 = 2.500$ on his paper.

a. What mistake has Shaunnie made? Explain using words, numbers, or pictures why her thinking is incorrect and what she needs to do to correct her answer.

Shaunnie is confusing the power of 5 with multiplying by 5. $10^5 = 100,000$ $10 \times 5 = 50$

b. What mistake has Marlon made? Explain using words, numbers, or pictures why his thinking is incorrect and what he needs to do to correct his answer.

Marlon added two zeroes but did not move the decimal point two places

$2.5 \times 10^2 = 250.$

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Name _____ Date _____

1. Write the following in exponential form (e.g., $100 = 10^2$).

a. $1000 = 10^3$

b. $10 \times 10 = 10^2$

c. $100{,}000 = 10^6$

d. $100 \times 10 = 10^3$

e. $1{,}000{,}000 = 10^6$

f. $10{,}000 \times 10 = 10^5$

2. Write the following in standard form (e.g., $4 \times 10^2 = 400$).

a. $4 \times 10^3 = 4{,}000$.

b. $64 \times 10^4 = 640{,}000$.

c. $5{,}300 \div 10^2 = 53$.

d. $5{,}300{,}000 \div 10^3 = 5{,}300$.

e. $6.072 \times 10^3 = 6{,}072$.

f. $60.72 \times 10^4 = 607{,}200$.

g. $948 \div 10^3 =$ 0.948

h. $9.4 \div 10^2 =$ 0.094

3. Complete the patterns.

a. 0.02 0.2 2 20 200 2,000

b. 3,400,000 34,000 340 3.4 0.034

c. 85,700 8,570 857 85.7 8.57 0.857

d. 444 4440 44,400 444,000 4,440,000 44,400,000

e. 0.095 9.5 950 95,000 9500000 95000000

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4. After a lesson on exponents, Tia went home and said to her mom, "I learned that 10^4 is the same as 40,000." She has made a mistake in her thinking. Use words, numbers, or a place value chart to help Tia correct her mistake.

$10^4 = 10{,}000$

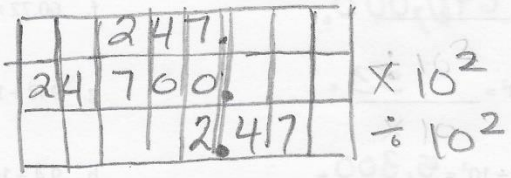
Tia forgot that the power of 4 means to add 4 zeroes to the one. She used the 4 as a factor as well.

5. Solve $247 \div 10^2$ and 247×10^2.

$247 \times 10^2 = 24{,}700.$

$247 \div 10^2 = 2.47$

a. What is different about the two answers? Use words, numbers, or pictures to explain how the digits shift.



b. Based on the answers from the pair of expressions above, solve $247 \div 10^3$ and 247×10^3.

$247 \times 10^3 = 247{,}000.$

$247 \div 10^3 = 0.247$

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10	$10 \times \_\_$	

powers of 10 chart

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Name _____ Date _____

1. Convert and write an equation with an exponent. Use your meter strip when it helps you.

a.	3 meters to centimeters	3 m = 300 cm	$3 \times 10^2 = 300$
b.	105 centimeters to meters	105 cm = 1.05 m	$105 \div 10^2 = 1.05$
c.	1.68 meters to centimeters	1.68 m = 168 cm	$1.68 \times 10^2 = 168.$
d.	80 centimeters to meters	80 cm = 0.8 m	$80 \div 10^2 = 0.8$
e.	9.2 meters to centimeters	9.2 m = 920 cm	$9.2 \times 10^2 = 920.$
f.	4 centimeters to meters	4 cm = 0.04 m	$4 \div 10^2 = 0.04$

g. In the space below, list the letters of the problems where larger units are converted to smaller units.

a) c) e)

2. Convert using an equation with an exponent. Use your meter strip when it helps you.

a.	3 meters to millimeters	3 m = 1,000 mm	$3 \times 10^3 = 3{,}000$
b.	1.2 meters to millimeters	1.2 m = 1,200 mm	$1.2 \times 10^3 = 1{,}200$
c.	1,020 millimeters to meters	1,020 mm = 1.02 m	$1{,}020 \div 10^3 = 1.02$
d.	97 millimeters to meters	97 mm = 0.097 m	$97 \div 10^3 = 0.097$
e.	7.28 meters to millimeters	7.28 m = 7,280 mm	$7.28 \times 10^3 = 7{,}280$
f.	4 millimeters to meters	4 mm = 0.004 m	$4 \div 10^3 = 0.004$

g. In the space below, list the letters of the problems where smaller units are converted to larger units.

c) d) f)

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3. Read each aloud as you write the equivalent measures. Write an equation with an exponent you might use to convert.

a.	3.512 m = 3,512. mm	$3.512 \times 10^3 = 3{,}512$
b.	8 cm = 0.08 m	$8 \div 10^2 = 0.08$
c.	42 mm = 0.042 m	$42 \div 10^3 = 0.042$
d.	0.05 m = 50. mm	$0.05 \times 10^3 = 50.$
e.	0.002 m = 0.2 cm	$0.002 \times 10^2 = 0.2$

4. The length of the bar for a high jump competition must always be 4.75 m. Express this measurement in millimeters. Explain your thinking. Include an equation with an exponent in your explanation.

4.75m = 4,750 mm

$4.75 \times 10^3 = 4{,}750$

I multiply 4.75 by a 1,000 to get millimeters

5. A honey bee's length measures 1 cm. Express this measurement in meters. Explain your thinking. Include an equation with an exponent in your explanation.

1cm = 0.01m

$1 \div 10^2 = 0.01$

I divided 1cm by 100 to get meters

6. Explain why converting from meters to centimeters uses a different exponent than converting from meters to millimeters.

A meter has 100 centimeters, and it has 1,000 millimeters. So, to get centimeters one uses 10^2, and to convert to millimeters, one uses 10^3

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Name _____ Date _____

1. Convert and write an equation with an exponent. Use your meter strip when it helps you.

a.	2 meters to centimeters	2m = 200 cm	$2 \times 10^2 = 200$
b.	108 centimeters to meters	108 cm = 1.08 m	$108 \div 10^2 = 1.08$
c.	2.49 meters to centimeters	2.49 m = 249 cm	$2.49 \times 10^2 = 249$
d.	50 centimeters to meters	50 cm = 0.5 m	$50 \div 10^2 = 0.5$
e.	6.3 meters to centimeters	6.3 m = 630 cm	$6.3 \times 10^2 = 630$
f.	7 centimeters to meters	7 cm = 0.07 m	$7 \div 10^2 = 0.07$

g. In the space below, list the letters of the problems where smaller units are converted to larger units.

b) d) f)

2. Convert using an equation with an exponent. Use your meter strip when it helps you.

a.	4 meters to millimeters	4 m = 4,000 mm	$4 \times 10^3 = 4{,}000$.
b.	1.7 meters to millimeters	1.7 m = 1,700 mm	$1.7 \times 10^3 = 1{,}700$.
c.	1,050 millimeters to meters	1,050 mm = 1.05 m	$1{,}050 \div 10^3 = 1.05$
d.	65 millimeters to meters	65 mm = 0.065 m	$65 \div 10^3 = 0.065$
e.	4.92 meters to millimeters	4.92 m = 4,920 mm	$4.92 \times 10^3 = 4{,}920$
f.	3 millimeters to meters	3 mm = 0.003 m	$3 \div 10^3 = 0.003$

g. In the space below, list the letters of the problems where larger units are converted to smaller units.

a) b) e)

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3. Read each aloud as you write the equivalent measures. Write an equation with an exponent you might use to convert.

a. 2.638 m = 2,638 mm $2.638 \times 10^3 = 2{,}638$

b. 7 cm = 0.07 m $7 \div 10^2 = 0.07$

c. 39 mm = 0.039 m $39 \div 10^3 = 0.039$

d. 0.08 m = 80 mm $0.08 \times 10^3 = 80$

e. 0.005 m = 0.5 cm $0.005 \times 10^2 = 0.5$

4. Yi Ting's height is 1.49 m. Express this measurement in millimeters. Explain your thinking. Include an equation with an exponent in your explanation.

1.49 m = 149 cm

$1.49 \times 10^2 = 149$

1 meter has 100 centimeters, so I multiply by a 100 or 10^2

5. A ladybug's length measures 2 cm. Express this measurement in meters. Explain your thinking. Include an equation with an exponent in your explanation.

2 cm = 0.02 m

$2 \div 10^2 = 0.02$

I divide by 100 or 10^2. 1 meter has 100 centimeters. So, 1 centimeter is 100 times smaller than 1 meter.

6. The length of a sticky note measures 77 millimeters. Express this length in meters. Explain your thinking. Include an equation with an exponent in your explanation.

77 mm = 0.077 m

$77 \div 10^3 = 0.077$

A meter has 1000 millimeters. To convert mm to m, I divide by 1,000 or 10^3

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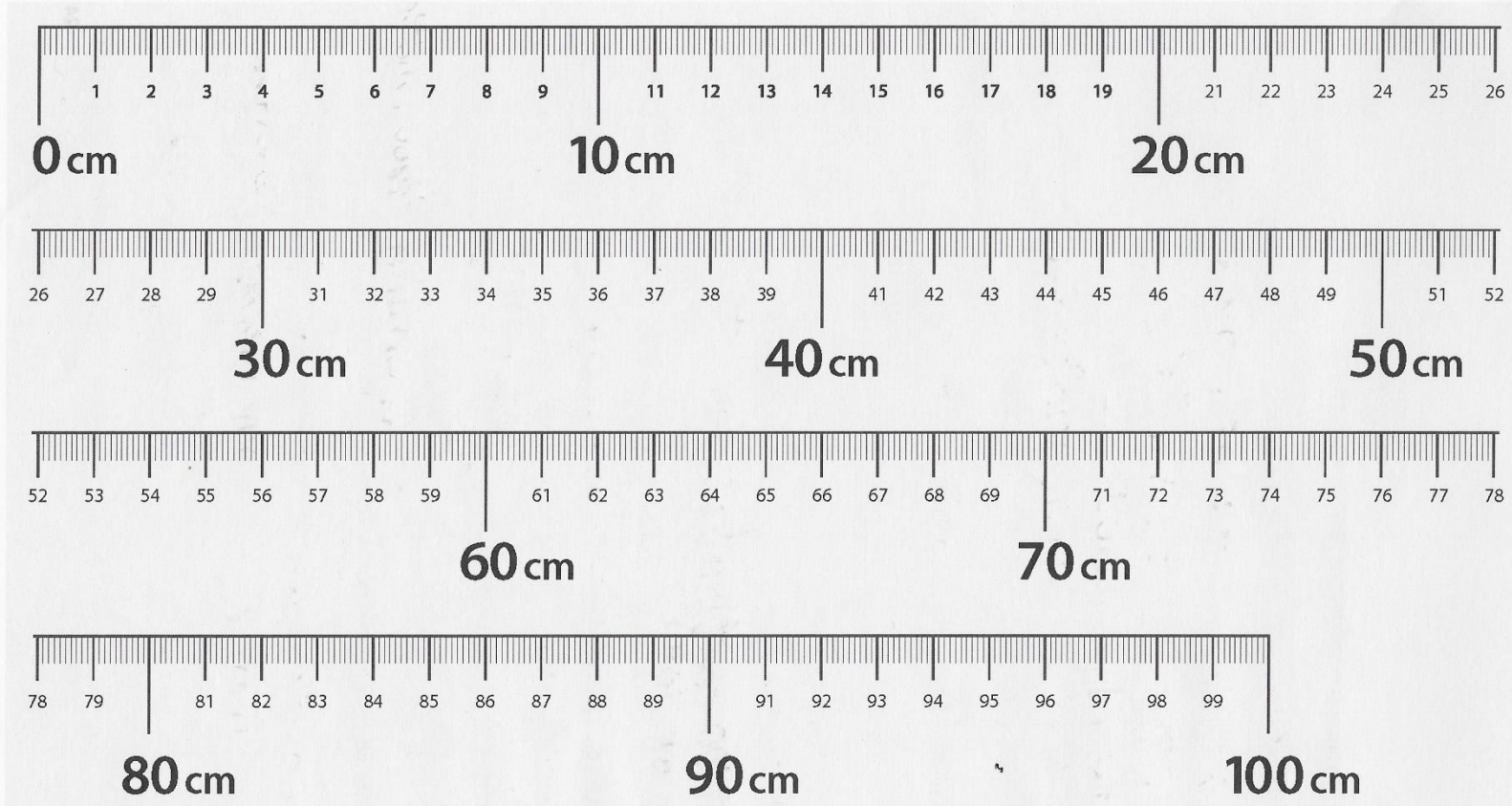

meter strip

Name _____ Date _____

1. Express as decimal numerals. The first one is done for you.

a. Four thousandths	0.004
b. Twenty-four thousandths	0.024
c. One and three hundred twenty-four thousandths	1.324
d. Six hundred eight thousandths	0.608
e. Six hundred and eight thousandths	600.008
f. $\frac{46}{1000}$	0.046
g. $3\frac{946}{1000}$	3.946
h. $200\frac{904}{1000}$	200.904

2. Express each of the following values in words.

a. 0.005 Five thousands

b. 11.037 Eleven and thirty-seven thousandths

c. 403.608 Four hundred three and six hundred eight thousandths

3. Write the number on a place value chart. Then, write it in expanded form using fractions or decimals to express the decimal place value units. The first one is done for you.

a. 35.827

Tens	Ones		Tenths	Hundredths	Thousandths
3	5	●	8	2	7

$35.827 = 3 \times 10 + 5 \times 1 + 8 \times \left(\frac{1}{10}\right) + 2 \times \left(\frac{1}{100}\right) + 7 \times \left(\frac{1}{1000}\right)$ *or*

$= 3 \times 10 + 5 \times 1 + 8 \times 0.1 + 2 \times 0.01 + 7 \times 0.001$

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b. 0.249

0	.	2	4	9

$0 \times 1 + 2 \times \left(\frac{1}{10}\right) + 4 \times \left(\frac{1}{100}\right) + 9 \times \left(\frac{1}{1{,}000}\right)$

$0 \times 1 + 2 \times 0.1 + 4 \times 0.01 + 9 \times 0.001$

c. 57.281

5	7	.	2	8	1

$5 \times 10 + 7 \times 1 + 2 \times \left(\frac{1}{10}\right) + 8 \times \left(\frac{1}{100}\right) + 1 \times \left(\frac{1}{1{,}000}\right)$

$5 \times 10 + 7 \times 1 + 2 \times 0.1 + 8 \times 0.01 + 1 \times 0.001$

4. Write a decimal for each of the following. Use a place value chart to help, if necessary.

a. $7 \times 10 + 4 \times 1 + 6 \times \left(\frac{1}{10}\right) + 9 \times \left(\frac{1}{100}\right) + 2 \times \left(\frac{1}{1000}\right)$

$70 + 4 + 0.6 + 0.09 + 0.002$

b. $5 \times 100 + 3 \times 10 + 8 \times 0.1 + 9 \times 0.001$

$500 + 30 + 8 + 0.8 + 0.009$

c. $4 \times 1{,}000 + 2 \times 100 + 7 \times 1 + 3 \times \left(\frac{1}{100}\right) + 4 \times \left(\frac{1}{1000}\right)$

$4{,}000 + 200 + 7 + 0.03 + 0.004$

5. Mr. Pham wrote 2.619 on the board. Christy says it is two and six hundred nineteen thousandths. Amy says it is 2 ones 6 tenths 1 hundredth 9 thousandths. Who is right? Use words and numbers to explain your answer.

2.619
Two and six hundred nineteen thousandths
2 ones 6 tenths 1 hundredth 9 thousandth
Christy and Amy are both right. Christy is reading it, Amy is telling the value of each digit.

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Name _____ Date _____

1. Express as decimal numerals. The first one is done for you.

a. Five thousandths	0.005
b. Thirty-five thousandths	0.035
c. Nine and two hundred thirty-five thousandths	9.235
d. Eight hundred and five thousandths	800.005
e. $\frac{8}{1000}$	0.008
f. $\frac{28}{1000}$	0.028
g. $7\frac{528}{1000}$	7.528
h. $300\frac{502}{1000}$	300.502

2. Express each of the following values in words.

a. 0.008 Eight thousandths

b. 15.062 Fifteen and sixty-two thousandths

c. 607.409 Six hundred seven and four hundred nine thousandths

3. Write the number on a place value chart. Then, write it in expanded form using fractions or decimals to express the decimal place value units. The first one is done for you.

a. 27.346

Tens	Ones	●	Tenths	Hundredths	Thousandths
2	7		3	4	6

$27.346 = 2 \times 10 + 7 \times 1 + 3 \times \left(\frac{1}{10}\right) + 4 \times \left(\frac{1}{100}\right) + 6 \times \left(\frac{1}{1000}\right)$ *or*

$27.346 = 2 \times 10 + 7 \times 1 + 3 \times 0.1 + 4 \times 0.01 + 6 \times 0.001$

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b. 0.362

0	.	3	6	2

$3\times\left(\frac{1}{10}\right)+6\times\left(\frac{1}{100}\right)+2\times\left(\frac{1}{1000}\right)$

$3\times 0.1+6\times 0.01+2\times 0.001$

c. 49.564

4	9	.	5	6	4

$4\times 10+9\times 1+5\times\left(\frac{1}{10}\right)+6\times\left(\frac{1}{100}\right)+4\times\left(\frac{1}{1000}\right)$

$4\times 10+9\times 1+5\times 0.1+6\times 0.01+4\times 0.001$

4. Write a decimal for each of the following. Use a place value chart to help, if necessary.

a. $3\times 10+5\times 1+2\times\left(\frac{1}{10}\right)+7\times\left(\frac{1}{100}\right)+6\times\left(\frac{1}{1000}\right)$

$30+5+0.2+0.07+0.006$

b. $9\times 100+2\times 10+3\times 0.1+7\times 0.001$

$900+20+0.3+0.007$

c. $5\times 1000+4\times 100+8\times 1+6\times\left(\frac{1}{100}\right)+5\times\left(\frac{1}{1000}\right)$

$5{,}000+400+8+0.06+0.005$

5. At the beginning of a lesson, a piece of chalk is 4.875 inches long. At the end of the lesson, it is 3.125 inches long. Write the two amounts in expanded form using fractions.

a. At the beginning of the lesson: 4.875

$4\times 1+8\times\left(\frac{1}{10}\right)+7\times\left(\frac{1}{100}\right)+5\times\left(\frac{1}{1000}\right)$

b. At the end of the lesson:

3.125

$3\times 1+1\times\left(\frac{1}{10}\right)+2\times\left(\frac{1}{100}\right)+5\times\left(\frac{1}{1000}\right)$

6. Mrs. Herman asked the class to write an expanded form for 412.638. Nancy wrote the expanded form using fractions, and Charles wrote the expanded form using decimals. Write their responses.

$4\times 100+1\times 10+2\times 1+6\times\left(\frac{1}{10}\right)+3\times\left(\frac{1}{100}\right)+8\times\left(\frac{1}{1000}\right)$

$4\times 100+1\times 10+2\times 1+6\times 0.1+3\times 0.01+8\times 0.001$

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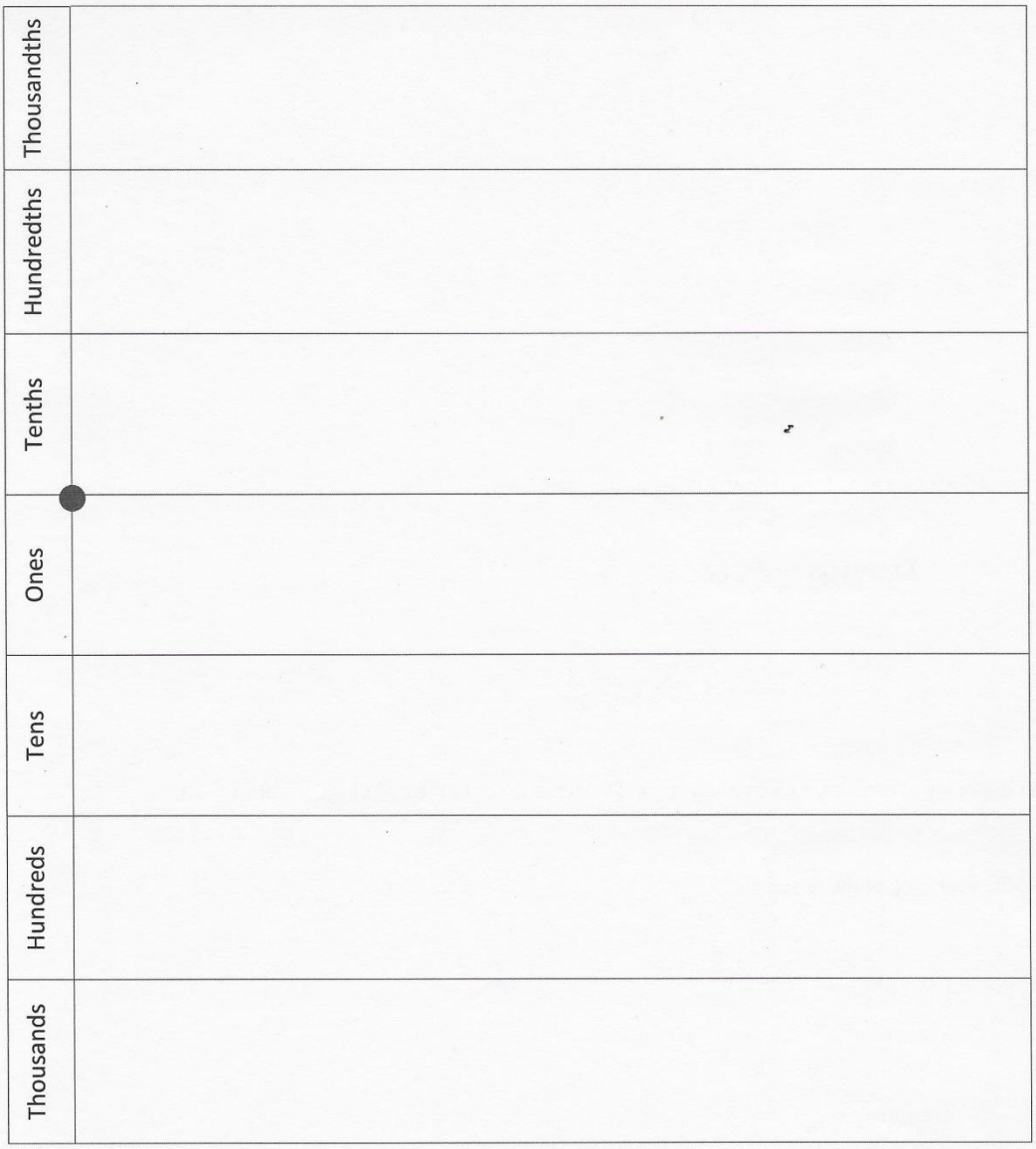

thousands through thousandths place value chart

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i. 202 hundredths 2.02	◯	2 hundreds and 2 thousandths 200.002
j. One hundred fifty-eight thousandths 0.158	◯	158,000
k. 4.15	◯	415 tenths 41.5

3. Arrange the numbers in increasing order.

a. 3.049 3.059 3.05 3.04

3.04, 3.049, 3.05, 3.059

b. 182.205 182.05 182.105 182.025

182.025, 182.05, 182.105, 182.205

4. Arrange the numbers in decreasing order.

a. 7.608 7.68 7.6 7.068

7.68, 7.608, 7.6, 7.068

b. 439.216 439.126 439.612 439.261

439.612, 439.261, 439.216, 439.126

Name _____ Date _____

1. Show the numbers on the place value chart using digits. Use >, <, or = to compare. Explain your thinking in the space to the right.

34.223 34.232

	3	4	2	2	3
	3	4	2	3	2

0.8 0.706

		0	8		
		0	7	0	6

2. Use >, <, or = to compare the following. Use a place value chart to help, if necessary.

a. 16.3		16.4
b. 0.83		$\frac{83}{100}$ 0.83
c. $\frac{205}{1000}$ 0.205		0.205
d. 95.580		95.58
e. 9.1		9.099
f. 8.3		83 tenths 8.3
g. 5.8		Fifty-eight hundredths 058
h. Thirty-six and nine thousandths		4 tens 40

36.009

3. Arrange the numbers in decreasing order.

a. 8.508 8.58 7.5 7.058

8.58 8.508 7.5 7.058

b. 439.216 439.126 439.612 439.261

439.612 439.261 439.216 439.126

4. James measured his hand. It was 0.17 meter. Jennifer measured her hand. It was 0.165 meter. Whose hand is bigger? How do you know?

James 0.17
Jennifer 0.165

0.17 hundredths is bigger than 0.165 thousandths by 5 thousandths.

James's hand is bigger.

5. In a paper airplane contest, Marcel's plane travels 3.345 meters. Salvador's plane travels 3.35 meters. Jennifer's plane travels 3.3 meters. Based on the measurements, whose plane traveled the farthest distance? Whose plane traveled the shortest distance? Explain your reasoning using a place value chart.

Marcel 3.345
Salvador 3.35
Jennifer 3.3

J	3	.	3	
M	3	.	3	4	5
S	3	.	3	5	

Salvador's flew the farthest and Jennifer's flew the shortest

Name _____ Date _____

1. Use >, <, or = to compare the following.

a. 16.45		16.454
b. 0.83		$\frac{83}{100}$
c. $\frac{205}{1000}$		0.205
d. 95.045		95.545
e. 419.10		419.099
f. Five ones and eight tenths 5.8		Fifty-eight tenths 5.8
g. Thirty-six and nine thousandths 36.009		Four tens 40
h. One hundred four and twelve hundredths 104.12		One hundred four and two thousandths 104.002
i. One hundred fifty-eight thousandths 0.158		0.58
j. 703.005		Seven hundred three and five hundredths 703.05

2. Arrange the numbers in increasing order.

a. 8.08 8.081 8.09 8.008

8.008 8.08 8.081 8.09

b. 14.204 14.200 14.240 14.210

14.200 14.204 14.210 14.240

5. Lance measured 0.485 liter of water. Angel measured 0.5 liter of water. Lance said, "My beaker has more water than yours because my number has three decimal places and yours only has one." Is Lance correct? Use words and numbers to explain your answer.

Lance 0.485
Angel 0.5

Lance is wrong. The number of decimals does not indicate that a number is bigger or smaller than other.

5 tenths is larger than 485 thousand

6. Dr. Hong prescribed 0.019 liter more medicine than Dr. Tannenbaum. Dr. Evans prescribed 0.02 less than Dr. Hong. Who prescribed the most medicine? Who prescribed the least?

Dr Hong
0.019 > Dr Tannenbaum

Dr Tannenbaum

Dr Evans
0.002 < Dr Hong

H 0.019

T

E 0.02

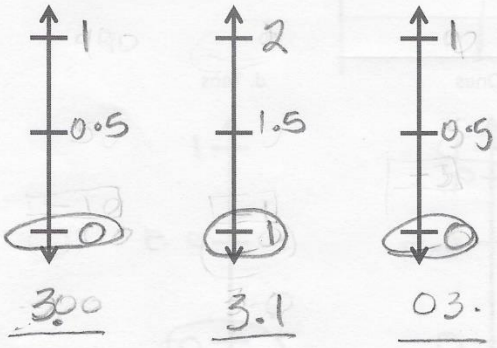
Dr Evans prescribed the least

Name _____ Date _____

Fill in the table, and then round to the given place. Label the number lines to show your work. Circle the rounded number.

1. 3.1

a. Hundredths b. Tenths c. Tens

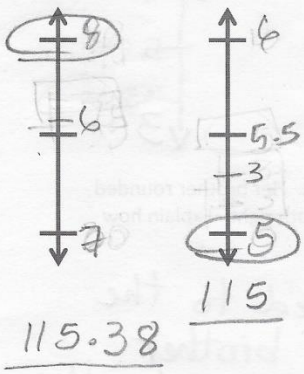


3.1

Tens	Ones	Tenths	Hundredths	Thousandths	
	3	0	0		a
	3	1			b
0	3				c

2. 115.376

a. Hundredths b. Ones c. Tens



115.376

Tens	Ones	Tenths	Hundredths	Thousandths	
1	5	3	7	6	
1	5	3	8		a
1	5	0	0		b
2	0	0	0		c

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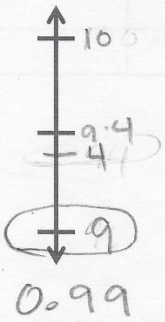
3. 0.994

0.994

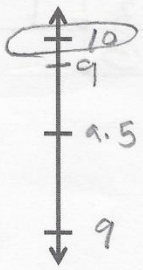
	Tens	Ones	Tenths	Hundredths	Thousandths
tens	0	0.	9	9	4
ones		1			
tenths		1.	0		
hundredths		0	9	9	

a. Hundredths



0.99

b. Tenths

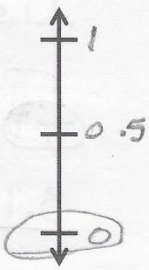


1.0

c. Ones

1.0

d. Tens



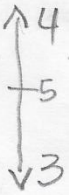
00.

4. For open international competition, the throwing circle in the men's shot put must have a diameter of 2.135 meters. Round this number to the nearest hundredth. Use a number line to show your work.

2.135

hundredth

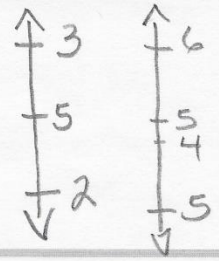
2.14



5. Jen's pedometer said she walked 2.549 miles. She rounded her distance to 3 miles. Her brother rounded her distance to 2.5 miles. When they argued about it, their mom said they were both right. Explain how that could be true. Use number lines and words to explain your reasoning.

2.549

2.549



Jen rounded to the ones. Her brother rounded to the tenths. Jen rounded up. Her brother rounded down.

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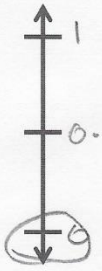
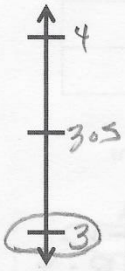
Name _____ Date _____

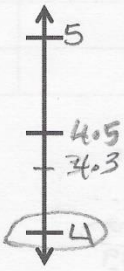
Fill in the table, and then round to the given place. Label the number lines to show your work. Circle the rounded number.

1. 4.3

a. Hundredths b. Tenths c. Ones





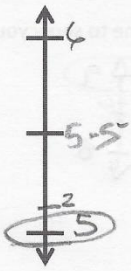


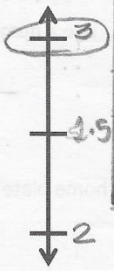
Tens	Ones	Tenths	Hundredths	Thousandths
	4	0	0	
	4	6		
	4			

2. 225.286

a. Hundredths b. Ones c. Tens

hundredths





	Tens	Ones	Tenths	Hundredths	Thousandths
2	2	5	2	9	
2	2	5			
2	3	0			

225.29 225 230

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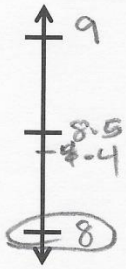
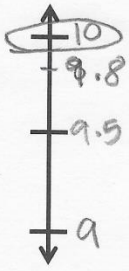
3. 8.984

	Tens	Ones	Tenths	Hundredths	Thousandths
a	9	8	9	8	
b		9	0		
c		9	0		
d	1	0			

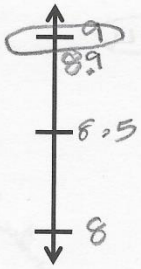
a. Hundredths



b. Tenths



c. Ones

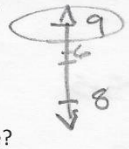


d. Tens

4. On a Major League Baseball diamond, the distance from the pitcher's mound to home plate is 18.386 meters.

a. Round this number to the nearest hundredth of a meter. Use a number line to show your work.

18.386 18.39



b. How many centimeters is it from the pitcher's mound to home plate?

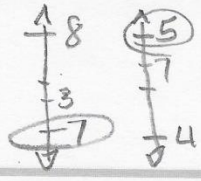
18.39m = 1839cm

5. Jules reads that 1 pint is equivalent to 0.473 liters. He asks his teacher how many liters there are in a pint. His teacher responds that there are about 0.47 liters in a pint. He asks his parents, and they say there are about 0.5 liters in a pint. Jules says they are both correct. How can that be true? Explain your answer.

1 pint = 0.473 liters

0.473 = 0.47

0.473 = 0.5



The teacher rounds to hundredths. Parents round to tenths

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Hundreds	Tens	Ones	•	Tenths	Hundredths	Thousandths

hundreds to thousandths place value chart

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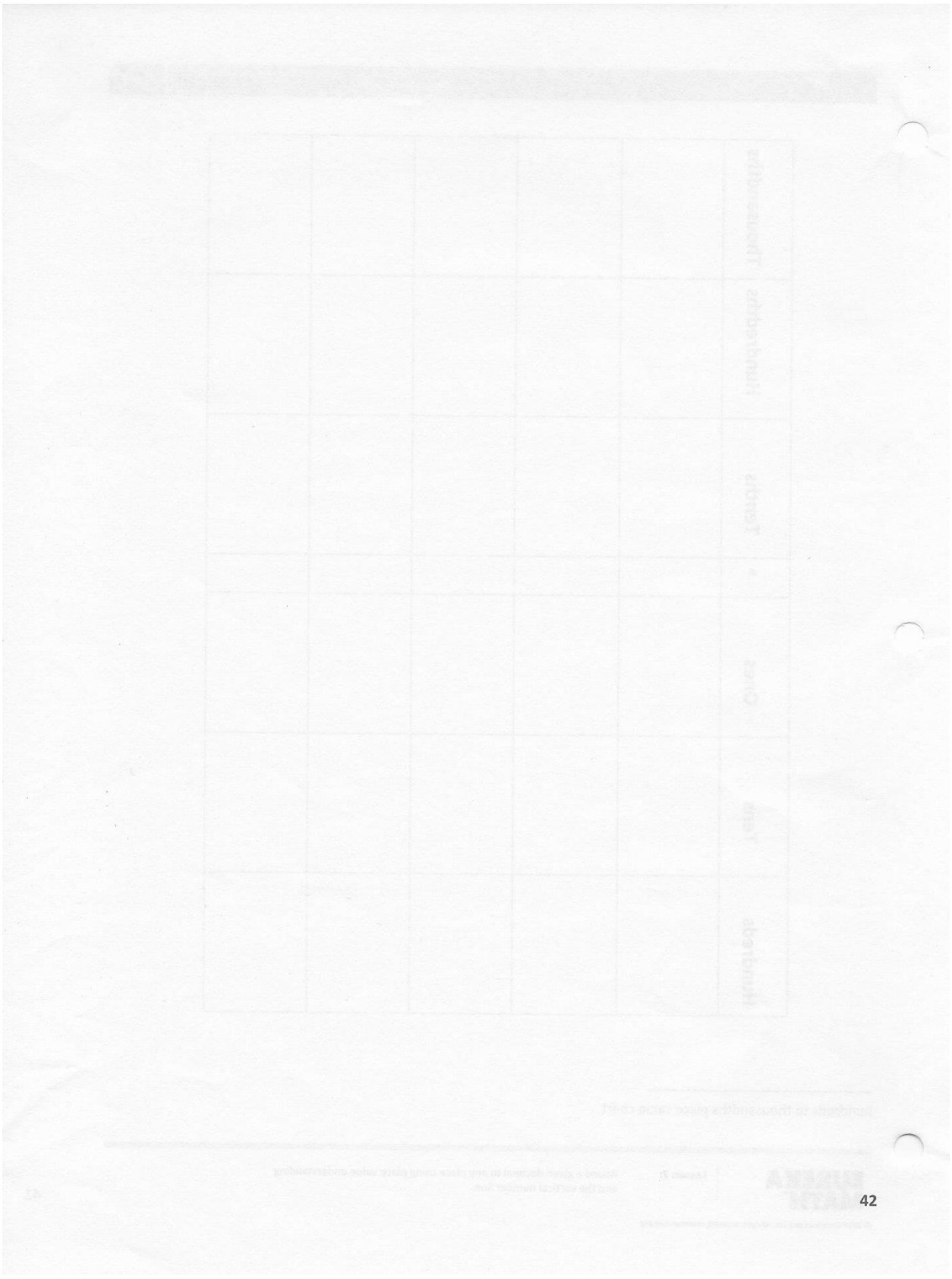
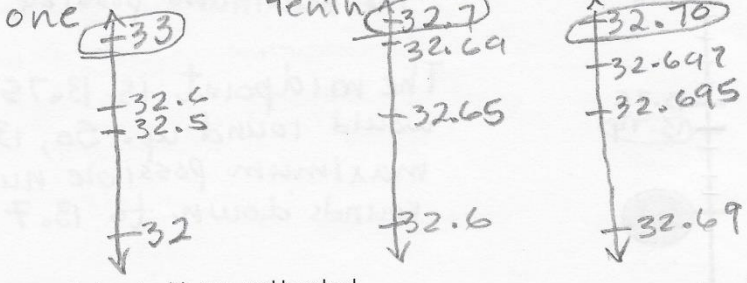


Name _____ Date _____

1. Write the decomposition that helps you, and then round to the given place value. Draw number lines to explain your thinking. Circle the rounded value on each number line.

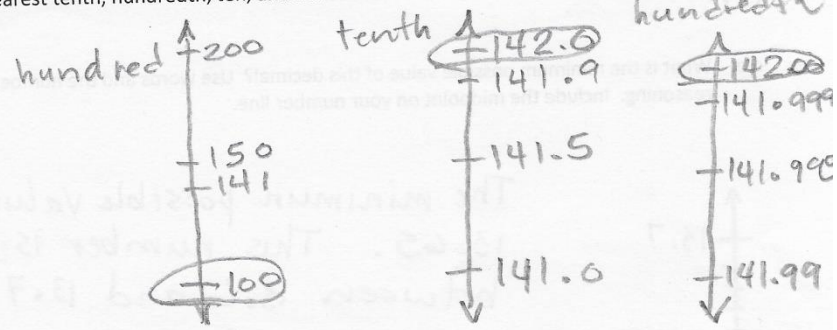
   a. Round 32.697 to the nearest tenth, hundredth, and one.

32.697



   b. Round 141.999 to the nearest tenth, hundredth, ten, and hundred.

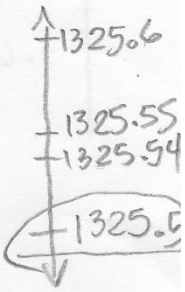
141.999



2. A root beer factory produces 132,554 cases in 100 days. About how many cases does the factory produce in 1 day? Round your answer to the nearest tenth of a case. Show your thinking on the number line.

132,554 ÷ 100 = 1325.54

1325.54 ≈ 1,325.5



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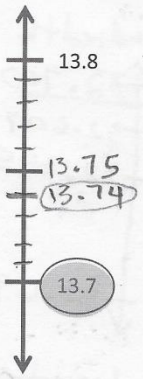
3. A decimal number has two digits to the right of its decimal point. If we round it to the nearest tenth, the result is 13.7.

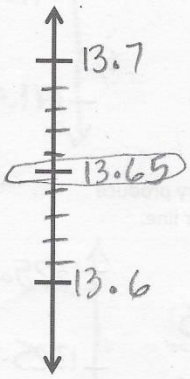
   a. What is the maximum possible value of this number? Use words and the number line to explain your reasoning. Include the midpoint on your number line.



The maximum possible number is 13.74

The midpoint is 13.75. This point would round up. So, 13.74 is the maximum possible number that rounds down to 13.7

   b. What is the minimum possible value of this decimal? Use words and the number line to explain your reasoning. Include the midpoint on your number line.



The minimum possible value would be 13.65. This number is the midpoint between 13.6 and 13.7

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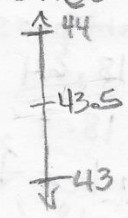
Name _____ Date _____

1. Write the decomposition that helps you, and then round to the given place value. Draw number lines to explain your thinking. Circle the rounded value on each number line.

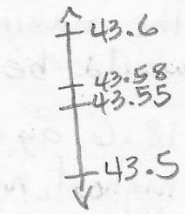
   a. 43.586 to the nearest tenth, hundredth, and one.

43.586

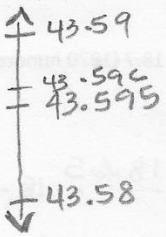
ones: 44



tenths: 43.6



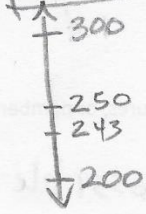
hundredths: 43.59



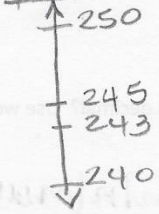
   b. 243.875 to nearest tenth, hundredth, ten, and hundred.

243.875

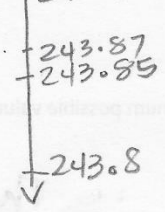
hundreds: 200



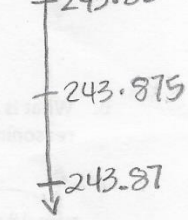
tens: 240



tenths: 243.9



hundredths: 243.88



2. A trip from New York City to Seattle is 2,852.1 miles. A family wants to make the drive in 10 days, driving the same number of miles each day. About how many miles will they drive each day? Round your answer to the nearest tenth of a mile.

2,852.1 ÷ 10 = 285.21

285.2

The family will drive 285.2 miles daily

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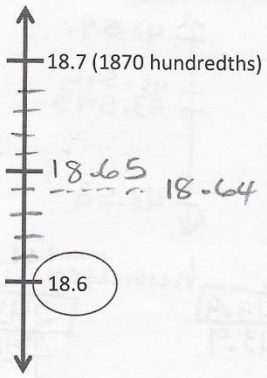
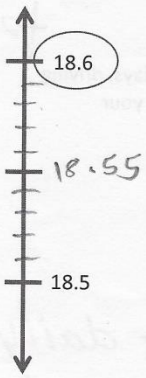
3. A decimal number has two digits to the right of its decimal point. If we round it to the nearest tenth, the result is 18.6.

   a. What is the maximum possible value of this number? Use words and the number line to explain your reasoning. Include the midpoint on your number line.



The maximum possible value would be 18.64. Between 18.6 and 18.7, 18.64 is the highest number that rounds down to 18.6.

   b. What is the minimum possible value of this decimal? Use words, pictures, or numbers to explain your reasoning.



The minimum possible value is 18.55. This number is the midpoint between 18.5 and 18.6. Therefore, is the least number that rounds up to 18.6.

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Name _____ Date _____

1. Solve, and then write the sum in standard form. Use a place value chart if necessary.

   a. 1 tenth + 2 tenths = 3 tenths = 0.3

   b. 14 tenths + 9 tenths = 23 tenths = 2 one(s) 3 tenth(s) = 23

   c. 1 hundredth + 2 hundredths = 3 hundredths = 0.03

   d. 27 hundredths + 5 hundredths = 32 hundredths = 3 tenths 2 hundredths = 0.32

   e. 1 thousandth + 2 thousandths = 3 thousandths = 0.003

   f. 35 thousandths + 8 thousandths = 43 thousandths = 4 hundredths 3 thousandths = 0.043

   g. 6 tenths + 3 thousandths = 603 thousandths = 0.603

   h. 7 ones 2 tenths + 4 tenths = 76 tenths = 7.6

   i. 2 thousandths + 9 ones 5 thousandths = 9007 thousandths = 9.007

2. Solve using the standard algorithm.

a. 0.3+ 0.82 = 1.12 0.3 + 0.82 1.12	b. 1.03 + 0.08 = 1.11 1 1.03 + 0.08 1.11
c. 7.3 + 2.8 = 10.1 1 7.3 + 2.8 10.1	d. 57.03 + 2.08 = 60.11 57.03 + 2.08 59.11

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e. 62.573 + 4.328 = 66.901	f. 85.703 + 12.197 = 97.9
1 1 62.573 + 4.328 66.901	1 1 85.703 +12.197 97.900

3. Van Cortlandt Park's walking trail is 1.02 km longer than Marine Park. Central Park's walking trail is 0.242 km longer than Van Cortlandt's.

   a. Fill in the missing information in the chart below.

1
1.28
+ 1.02
2.30
Van Cortland's trail

New York City Walking Trails	
Central Park	2.542 km
Marine Park	1.28 km
Van Cortlandt Park	2.30 km

+ 2.30
0.242
2.542

   b. If a tourist walked all 3 trails in a day, how many kilometers would he or she have walked?

1 1
2.542
+ 2.3
1.28
6.122

She would have walked 6.122 km

4. Meyer has 0.64 GB of space remaining on his iPod. He wants to download a pedometer app (0.24 GB), a photo app (0.403 GB), and a math app (0.3 GB). Which combinations of apps can he download? Explain your thinking.

P=0.24
Ph=0.403
M=0.3
IPod=0.64

Meyer can download P and M or Ph and M. Meyer cannot download P and Ph because there is not enough memory left

.24
.403
.643

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Name _____ Date _____

1. Solve.

   a. 3 tenths + 4 tenths = 7 tenths

   b. 12 tenths + 9 tenths = 21 tenths = 2 one(s) 1 tenth(s)

   c. 3 hundredths + 4 hundredths = 34 hundredths

   d. 27 hundredths + 7 hundredths = 34 hundredths = 3 tenths 4 hundredths

   e. 4 thousandths + 3 thousandths = 7 thousandths

   f. 39 thousandths + 5 thousandths = 44 thousandths = 4 hundredths 4 thousandths

   g. 5 tenths + 7 thousandths = 507 thousandths

   h. 4 ones 4 tenths + 4 tenths = 48 tenths

   i. 8 thousandths + 6 ones 8 thousandths = 6.016 thousandths

$$\begin{array}{r} {}^{1}.008 \\ +6.008 \\ \hline 6.016 \end{array}$$

2. Solve using the standard algorithm.

a. 0.4 + 0.7 = 1.1 $\begin{array}{r} 0.4 \\ +0.7 \\ \hline 1.1 \end{array}$	b. 2.04 + 0.07 = 2.11 $\begin{array}{r} {}^{1}2.04 \\ +0.07 \\ \hline 2.11 \end{array}$
c. 6.4 + 3.7 = 10.1 $\begin{array}{r} {}^{1}6.4 \\ +3.7 \\ \hline 10.1 \end{array}$	d. 56.04 + 3.07 = 59.11 $\begin{array}{r} {}^{1}56.04 \\ +\ 3.07 \\ \hline 59.11 \end{array}$

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e. 72.564 + 5.137 = 77.701	f. 75.604 + 22.296 = 97.9
11 72.564 5.137 77.701	1 1 75.604 + 22.296 97.900

3. Walkway Over the Hudson, a bridge that crosses the Hudson River in Poughkeepsie, is 2.063 kilometers long. Anping Bridge, which was built in China 850 years ago, is 2.07 kilometers long.

   a. What is the total span of both bridges? Show your thinking.

2.063
2.07

2.063
+ 2.07
4.133

The total span is 4.133 km

   b. Leah likes to walk her dog on the Walkway Over the Hudson. If she walks across and back, how far will she and her dog walk?

1
2.063
X2
4.226

They will walk 4.226 km

4. For his parents' anniversary, Danny spends $5.87 on a photo. He also buys a balloon for $2.49 and a box of strawberries for $4.50. How much money does he spend all together?

$ 5.87
$ 2.49
$ 4.50

1 1
5.87
+ 2.49
4.50
12.86

He spends $12.86

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Name _____ Date _____

1. Subtract, writing the difference in standard form. You may use a place value chart to solve.

   a. 5 tenths – 2 tenths = 3 tenths = 0.3

   b. 5 ones 9 thousandths – 2 ones = 3 ones 9 thousandths = 3.009

   c. 7 hundreds 8 hundredths – 4 hundredths = 7 hundreds 4 hundredths = 700.04

   d. 37 thousandths – 16 thousandths = 21 thousandths = 0.021

   0.037
   −0.016
   0.021

2. Solve using the standard algorithm.

a. 1.4 – 0.7 = 0.7 1.4 − 0.7 0.7	b. 91.49 – 0.7 = 90.79 91.49 − 0.7 90.79	c. 191.49 – 10.72 = 180.77 191.49 − 10.72 180.77
d. 7.148 – 0.07 = 7.078 7.148 − 0.07 7.078	e. 60.91 – 2.856 = 58.054 60.91 − 2.856 58.054	f. 361.31 – 2.841 = 358.469 361.31 − 2.841 358.469

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3. Solve.

a. 10 tens – 1 ten 1 tenth	b. 3 – 22 tenths	c. 37 tenths – 1 one 2 tenths
100. − 10.1 89.9	3. − 2.2 0.8	3.7 1.2 2.5
d. 8 ones 9 hundredths – 3.4	**e. 5.622 – 3 hundredths**	**f. 2 ones 4 tenths – 0.59**
8.09 − 3.4 4.69	5.622 − .03 5.592	2.4 − 0.59 1.81

4. Mrs. Fan wrote *5 tenths minus 3 hundredths* on the board. Michael said the answer is 2 tenths because 5 minus 3 is 2. Is he correct? Explain.

0.5
− 0.03
0.47

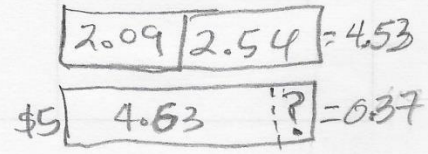
Michael is wrong. The 5 are tenths, but the 3 are hundredths.

5. A pen costs $2.09. It costs $0.45 less than a marker. Ken paid for one pen and one marker with a five dollar bill. Use a tape diagram with calculations to determine his change.

Pen $2.09
Marker $2.54

+2.09
2.54
4.63

2.09
+0.45
2.54



−5.00
4.63
0.37

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Name _____ Date _____

1. Subtract. You may use a place value chart.

   a. 9 tenths – 3 tenths = 6 tenths

   b. 9 ones 2 thousandths – 3 ones = 6 ones 2 thousandths

   c. 4 hundreds 6 hundredths – 3 hundredths = 4 hundreds 3 hundredths

   d. 56 thousandths – 23 thousandths = 33 thousandths = 3 hundredths 3 thousandths

2. Solve using the standard algorithm.

a. 1.8 – 0.9 = 0.9 1.8 −0.9 0.9	b. 41.84 – 0.9 = 40.94 41.84 − 0.9 40.94	c. 341.84 – 21.92 = 319.92 341.84 − 21.92 319.92
d. 5.182 – 0.09 = 5.092 5.182 − 0.09 5.092	e. 50.416 – 4.25 = 46.166 50.416 − 4.25 46.166	f. 741 – 3.91 = 737.09 741.00 3.91 737.09

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3. Solve.

a. 30 tens – 3 tens 3 tenths 300.0 − 30.3 369.7	b. 5 – 16 tenths 5.0 − 1.6 3.4	c. 24 tenths – 1 one 3 tenths 2.4 − 1.3 1.1
d. 6 ones 7 hundredths – 2.3 6.07 − 2.3 3.77	e. 8.246 – 5 hundredths 8.246 − .05 8.196	f. 5 ones 3 tenths – 0.53 5.3 0.53 4.77

4. Mr. House wrote *8 tenths minus 5 hundredths* on the board. Maggie said the answer is 3 hundredths because 8 minus 5 is 3. Is she correct? Explain.

0.8
− .05
0.75

Maggie is wrong. 8 tenths minus 5 hundredths is 75 hundredths

5. A clipboard costs $2.23. It costs $0.58 more than a notebook. Lisa bought two clipboards and one notebook. She paid with a ten dollar bill. How much change does Lisa get? Use a tape diagram to show your thinking.

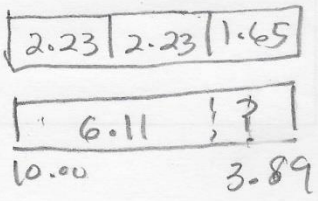
Clipboard $2.23
notebook $1.65

2.23
+ 0.58
1.65

2.23
× 2
4.46

4.46
+ 1.65
6.11

10.00
− 6.11
3.89



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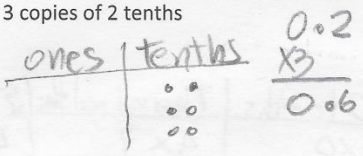
Name _____ Date _____

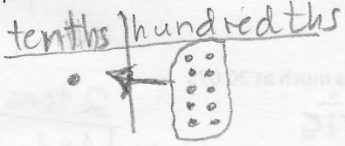
1. Solve by drawing disks on a place value chart. Write an equation, and express the product in standard form.

a. 3 copies of 2 tenths



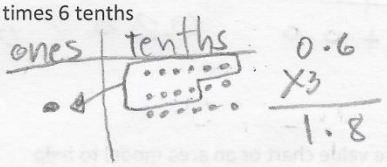
0.2
×3
0.6

b. 5 groups of 2 hundredths



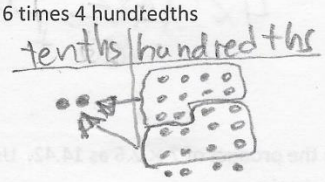
0.02
×5
0.10

c. 3 times 6 tenths



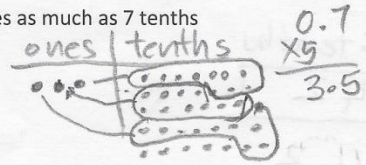
0.6
×3
1.8

d. 6 times 4 hundredths



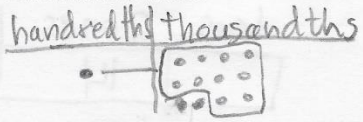
0.04
×6
0.24

e. 5 times as much as 7 tenths



0.7
×5
3.5

f. 4 thousandths times 3



1
0.004
×3
0.012

2. Draw a model similar to the one pictured below for Parts (b), (c), and (d). Find the sum of the partial products to evaluate each expression.

a. 7 × 3.12

	3 ones	+ 1 tenth	+ 2 hundredths
7	7 × 3 ones	7 × 1 tenth	7 × 2 hundredths

21 + 7 + 0.14 = 21.84

1
3.12
×7
21.84

b. 6 × 4.25

	4 ones	2 tenths	5 hundredths
6	24 ones	12 tenths	30 hundredths

24 + 1.2 + 0.30 = 25.50

1 3
4.25
×6
25.50

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c. 3 copies of 4.65

3×	4 ones	6 tenths	5 hundredths
	3×4	3×6	3×5

12 + 1.8 + 0.15

$$\begin{array}{r} {\scriptstyle 1\ 1} \\ 4.65 \\ \times\ 3 \\ \hline 13.95 \end{array}$$

d. 4 times as much as 20.075

$$\begin{array}{r} {\scriptstyle 3\ 2} \\ 20.075 \\ \times\ 4 \\ \hline 80.300 \end{array}$$

4×	2 tens	0 ones	0 tenths	7 hundredths	5 thousandths
	4×2	4×0	4×0	4×7	4×5

180 + 0 + 0.0 + 0.28 + 0.020

3. Miles incorrectly gave the product of 7 × 2.6 as 14.42. Use a place value chart or an area model to help Miles understand his mistake.

$$\begin{array}{r} {\scriptstyle 4} \\ 2.6 \\ \times\ 7 \\ \hline 16.2 \end{array}$$

	tens	2 ones	6 tenths
		14	42

14 + 4.2

4. Mrs. Zamir wants to buy 8 protractors and some erasers for her classroom. She has $30. If protractors cost $2.65 each, how much will Mrs. Zamir have left to buy erasers?

$$\begin{array}{r} {\scriptstyle 5\ 4} \\ \$\ 2.65 \\ \times\ 8 \\ \hline \$\ 21.20 \end{array}$$

$$\begin{array}{r} \$\ 30.00 \\ -\ \$\ 21.20 \\ \hline \$\ 18.80 \end{array}$$

Mrs Zamir will have $18.80 for erasers

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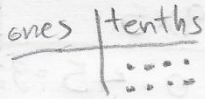
Name _____ Date _____

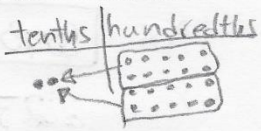
1. Solve by drawing disks on a place value chart. Write an equation, and express the product in standard form.

a. 2 copies of 4 tenths



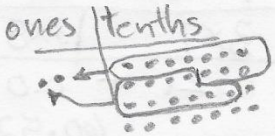
0.4 × 2 = 0.8

b. 4 groups of 5 hundredths



0.05 × 4 = 0.20

c. 4 times 7 tenths

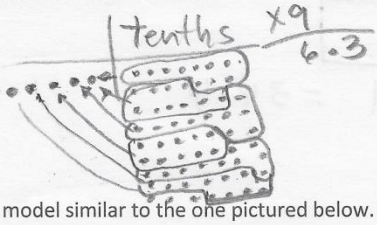


0.7 × 4 = 2.8

d. 3 times 5 hundredths

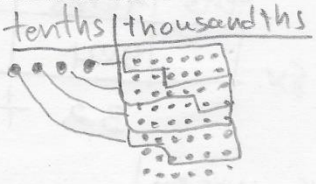
0.05 × 3 = 0.15

e. 9 times as much as 7 tenths



0.7 × 9 = 6.3

f. 6 thousandths times 8



0.006 × 8 = 0.048

2. Draw a model similar to the one pictured below. Find the sum of the partial products to evaluate each expression.

a. 4 × 6.79

	6 ones	+ 7 tenths	+ 9 hundredths
4	4 × 6 ones	4 × 7 tenths	4 × 9 hundredths

3 3
6.79 × 4 = 27.16

24 + 2.8 + 0.36 = 27.16

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b. 6 × 7.49

$$\begin{array}{r} {\scriptstyle 2\ 5} \\ 7.49 \\ \times\ 6 \\ \hline 44.94 \end{array}$$

7 ones 4 tenths 9 hundredths

6×	6×7	6×4	6×9

42 + 2.4 + 0.54 = 44.94

c. 9 copies of 3.65

$$\begin{array}{r} {\scriptstyle 5\ 4} \\ 3.65 \\ \times\ 9 \\ \hline 32.85 \end{array}$$

3 ones 6 tenths 5 hundredths

9×	9×3	9×6	9×5

27 + 5.4 + 0.45 = 32.85

d. 3 times 20.175

$$\begin{array}{r} {\scriptstyle 2\ 1} \\ 20.175 \\ \times\ 3 \\ \hline 60.525 \end{array}$$

2 tenths 0 ones 1 tenths 7 hundredths 5 thousandths

3×	3×2	3×0	3×1	3×7	3×5

60 + 0 + 0.3 + 0.21 + 0.015 = 60.525

3. Leanne multiplied 8 × 4.3 and got 32.24. Is Leanne correct? Use an area model to explain your answer.

$$\begin{array}{r} {\scriptstyle 2} \\ 4.3 \\ \times\ 8 \\ \hline 34.4 \end{array}$$

8×	tens	4 ones	3 tenths
		8×4	8×3

32 + 2.4 = 34.4

Leanne is wrong!

4. Anna buys groceries for her family. Hamburger meat is $3.38 per pound, sweet potatoes are $0.79 each, and hamburger rolls are $2.30 a bag. If Anna buys 3 pounds of meat, 5 sweet potatoes, and 1 bag of hamburger rolls, what will she pay in all for the groceries?

meat: $\begin{array}{r} {\scriptstyle 1\ 2} \\ \$3.38 \\ \times\ 3 \\ \hline \$10.14 \end{array}$

sweet potatoes: $\begin{array}{r} {\scriptstyle 3\ 4} \\ \$0.79 \\ \times\ 5 \\ \hline \$3.95 \end{array}$

rolls: $2.30

$$\begin{array}{r} {\scriptstyle 1\ \ \ 1} \\ \$10.14 \\ 3.95 \\ +\ 2.30 \\ \hline 16.39 \end{array}$$

Anna will pay $16.39

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Name _____ Date _____

1. Choose the reasonable product for each expression. Explain your reasoning in the spaces below using words, pictures, or numbers.

a. 2.5×4	0.1	1	(10)	100

2
2.5
×4
10.0

b. 3.14×7	2198	219.8	(21.98)	2.198

2
3.14
×7
21.98

c. 8×6.022	4.8176	(48.176)	481.76	4817.6

6.022
×8
48.176

d. 9×5.48	493.2	(49.32)	4.932	0.4932

4 7
5.48
×9
49.32

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2. Pedro is building a spice rack with 4 shelves that are each 0.55 meter long. At the hardware store, Pedro finds that he can only buy the shelving in whole meter lengths. Exactly how many meters of shelving does Pedro need? Since he can only buy whole number lengths, how many meters of shelving should he buy? Justify your thinking.

$$\begin{array}{r} {}^{2}0.55 \\ \times\ 4 \\ \hline 2.20 \end{array}$$

Pedro needs exactly 2.20 meters. So he needs to buy 3 m.

3. Marcel rides his bicycle to school and back on Tuesdays and Thursdays. He lives 3.62 kilometers away from school. Marcel's gym teacher wants to know about how many kilometers he bikes in a week. Marcel's math teacher wants to know exactly how many kilometers he bikes in a week. What should Marcel tell each teacher? Show your work.

$$\begin{array}{r} {}^{2}3.62 \\ \times\ 4 \\ \hline 14.48 \end{array}$$

Marcel rides exactly 14.48 Km or about 14 km.

4. The poetry club had its first bake sale, and they made $79.35. The club members are planning to have 4 more bake sales. Leslie said, "If we make the same amount at each bake sale, we'll earn $3,967.50." Peggy said, "No way, Leslie! We'll earn $396.75 after five bake sales." Use estimation to help Peggy explain why Leslie's reasoning is inaccurate. Show your reasoning using words, numbers, or pictures.

$$\begin{array}{r} {}^{3}{}^{1}{}^{2}79.35 \\ \times\ 4 \\ \hline 317.40 \end{array} \qquad \begin{array}{r} {}^{1}317.40 \\ +\ 79.35 \\ \hline 396.75 \end{array}$$

$79.35 \approx 80$

$80 \times 5 = 400$

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Name _____ Date _____

1. Choose the reasonable product for each expression. Explain your thinking in the spaces below using words, pictures, or numbers.

a.	2.1×3	0.63	(6.3)	63	630

2.1
×3
6.3

b.	4.27×6	2562	256.2	(25.62)	2.562

4.27
×6
25.62

c.	7×6.053	4237.1	423.71	(42.371)	4.2371

6.053
×7
42.371

d.	9×4.82	4.338	(43.38)	433.8	4338

4.82
×9
43.38

2. Yi Ting weighs 8.3 kg. Her older brother is 4 times as heavy as Yi Ting. How much does her older brother weigh in kilograms?

8.3
×4
33.2

Yi Ting's brother weighs 33.2 Kg

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3. Tim is painting his storage shed. He buys 4 gallons of white paint, and 3 gallons of blue paint. Each gallon of white paint costs $15.72, and each gallon of blue paints is $21.87. How much will Tim spend in all on paint?

white $15.72 × 4 = 62.88

blue $21.87 × 3 = 65.61

62.88 + 65.61 = 128.49

Tim will spend $128.49

4. Ribbon is sold at 3 yards for $6.33. Jackie bought 24 yards of ribbon for a project. How much did she pay?

24 ÷ 3 = 8

$6.33 × 8 = 50.64

or

2.11
3 | 6.33
6
03
3
03
-3
0

2.11 × 24 = 50.64

Jackie paid $50.64

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Name _____ Date _____

1. Complete the sentences with the correct number of units, and then complete the equation.

   a. 4 groups of 4 tenths is 1.6. 1.6 ÷ 4 = 0.4

   b. 8 groups of 4 hundredths is 0.32. 0.32 ÷ 8 = 0.04

   c. 7 groups of 12 thousandths is 0.084. 0.084 ÷ 7 = 0.012

   d. 5 groups of 4 tenths is 2.0. 2.0 ÷ 5 = 0.4

2. Complete the number sentence. Express the quotient in units and then in standard form.

   a. 4.2 ÷ 7 = 42 tenths ÷ 7 = 6 tenths = 0.6

   b. 2.64 ÷ 2 = 2 ones ÷ 2 + 64 hundredths ÷ 2
   = 1 ones + 32 hundredths
   = 1.32

   c. 12.64 ÷ 2 = 12 ones ÷ 2 + 64 hundredths ÷ 2
   = 6 ones + 32 hundredths
   = 6.32

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d. $4.26 \div 6 =$ 42 tenths $\div 6 +$ 6 hundredths $\div 6$

$=$ 7 tenths + 1 hundredth

$=$ 0.71

0.71
6 | 4.26
42
06

e. $4.236 \div 6 =$ 42 tenths $\div 6$ + 36 thousandths $\div 6$

$=$ 7 tenths + 6 thousandths

$=$ 0.706

0.706
4 | 4236
42
036
36
0

3. Find the quotients. Then, use words, numbers, or pictures to describe any relationships you notice between each pair of problems and quotients.

a. $32 \div 8 =$ 4 $\quad 3.2 \div 8 =$ 0.4

32 is 3.2×10 =

b. $81 \div 9 =$ 9 $\quad 0.081 \div 9 =$ 0.009

81 is $0.081 \times 10{,}000$

4. Are the quotients below reasonable? Explain your answers.

a. $5.6 \div 7 = 8$ No.

0.8
7 | 5.6
56
0

b. $56 \div 7 = 0.8$ No

8
7 | 56
56
0

0.08
7 | 0.56

c. $.56 \div 7 = 0.08$ Yes!

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5. 12.48 milliliters of medicine were separated into doses of 4 mL each. How many doses were made?

$$\begin{array}{r} 3.12 \\ 4\overline{)12.48} \\ \underline{12} \\ 0\,4 \\ \underline{4} \\ 0\,8 \\ \underline{8} \\ 0 \end{array}$$

There were 3 doses made

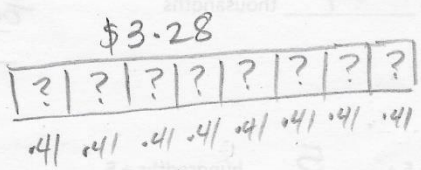
6. The price of milk in 2013 was around $3.28 a gallon. This was eight times as much as you would have probably paid for a gallon of milk in the 1950s. What was the cost for a gallon of milk during the 1950s? Use a tape diagram, and show your calculations.

2013 – $3.28

1950 – $0.41

$$\begin{array}{r} 0.41 \\ 8\overline{)3.28} \\ \underline{3\,2} \\ 0\,8 \\ \underline{8} \\ 0 \end{array}$$

The cost of milk would be $0.41 in 1950



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Name _____ Date _____

1. Complete the sentences with the correct number of units, and then complete the equation.

   a. 3 groups of 5 tenths is 1.5. 1.5 ÷ 3 = 0.5

   b. 6 groups of 4 hundredths is 0.24. 0.24 ÷ 6 = 0.4

   c. 5 groups of 9 thousandths is 0.045. 0.045 ÷ 5 = 0.09

2. Complete the number sentence. Express the quotient in units and then in standard form.

   a. 9.36 ÷ 3 = 9 ones ÷ 3 + 36 hundredths ÷ 3
   = 3 ones + 12 hundredths
   = 3.12

   b. 36.012 ÷ 3 = 36 ones ÷ 3 + 12 thousandths ÷ 3
   = 12 ones + 4 thousandths
   = 12.004

   c. 3.55 ÷ 5 = 35 tenths ÷ 5 + 5 hundredths ÷ 5
   = 0.7 + 0.01
   = 0.71

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d. 3.545 ÷ 5 = 35 tenths ÷ 5 + 45 thousandths ÷ 5
= 7 tenths + 9 thousandths
= 0.709

0.709
5 | 3.545
35
045
45
0

3. Find the quotients. Then, use words, numbers, or pictures to describe any relationships you notice between each pair of problems and quotients.

a. 21 ÷ 7 = 3 2.1 ÷ 7 = 0.3

21 is 2.1 × 10. The digits are the same. The decimal point moves one place

b. 48 ÷ 8 = 6 0.048 ÷ 8 = 0.006

48 is 0.048 × 1000. The digits are the same. The decimal point moves three places

4. Are the quotients below reasonable? Explain your answers.

a. 0.54 ÷ 6 = 9

0.09
6 | 0.54
54
0

No. 9 × 6 = 54. The quotient has to be 0.09 because the dividend is 0.54

b. 5.4 ÷ 6 = 0.9

0.9
6 | 5.4
54
0

Yes. 0.9 × 6 = 5.4

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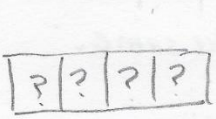
c. $54 \div 6 = 0.09$

$$\begin{array}{r} 9 \\ 6\overline{)54} \\ \underline{54} \\ 0 \end{array}$$

$9 \times 6 = 54$

No. $6 \times 0.09 = 0.54$ not 54

5. A toy airplane costs \$4.84. It costs 4 times as much as a toy car. What is the cost of the toy car?

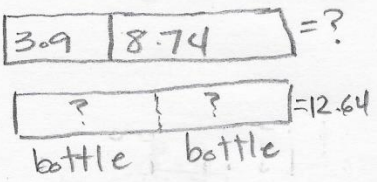


$$\begin{array}{r} 1.21 \\ 4\overline{)4.84} \\ \underline{4} \\ 08 \\ \underline{8} \\ 04 \\ \underline{4} \\ 0 \end{array}$$

A toy car costs \$1.21

6. Julian bought 3.9 liters of cranberry juice, and Jay bought 8.74 liters of apple juice. They mixed the two juices together, and then poured them equally into 2 bottles. How many liters of juice are in each bottle?

cranberry 3.9 liters
apple 8.74 liters



$$\begin{array}{r} {\scriptstyle 1} \\ 8.74 \\ +\ 3.9 \\ \hline 12.64 \end{array}$$

$$\begin{array}{r} 6.32 \\ 2\overline{)12.64} \\ \underline{12} \\ 06 \\ \underline{6} \\ 04 \\ \underline{4} \\ 0 \end{array}$$

There are 6.32 liters in each bottle

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Name _____ Date _____

1. Draw place value disks on the place value chart to solve. Show each step using the standard algorithm.

a. 4.236 ÷ 3 = 1.412

Ones	Tenths	Hundredths	Thousandths
4	2	3	6
0	0000	0	00
0	0000	0	00
0	0000	0	00

$$\begin{array}{r} \times 1.412 \\ \hline 3 \overline{)\,4.236} \\ 3 \\ \hline 12 \\ 12 \\ \hline 03 \\ 3 \\ \hline 06 \end{array}$$

b. 1.324 ÷ 2 = _____

Ones	Tenths	Hundredths	Thousandths
1	3	2	4
	0600	0000	00
	0000	0000	00

$$\begin{array}{r} 0.662 \\ \hline 2 \overline{)\,1.324} \\ 12 \\ \hline 12 \\ 12 \\ \hline 04 \\ 4 \\ \hline 0 \end{array}$$

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2. Solve using the standard algorithm.

a. $0.78 \div 3 =$ 0.26	b. $7.28 \div 4 =$ 1.82	c. $17.45 \div 5 =$ 3.49
0.26 3|0.78 6 18 18 0	1.82 4|7.28 4 32 32 08 8 0	3.49 5|17.45 15 24 20 45 45 0

3. Grayson wrote $1.47 \div 7 = 2.1$ in her math journal.
Use words, numbers, or pictures to explain why Grayson's thinking is incorrect.

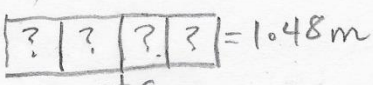
0.21
7\|1.47
14
07
07
0

Grayson misplaced the decimal point. 1.4 divided by 7 is 0.7 not 7. He could have checked by multiplying 7 x 2.1. This give 14.7 not 1.47

4. Mrs. Nguyen used 1.48 meters of netting to make 4 identical mini hockey goals. How much netting did she use per goal?

0.37
4\|1.48
12
28
28
0

1.48 ÷ 4 = 0.37

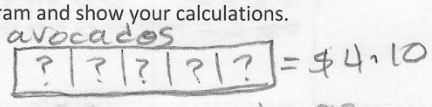


Mrs Nguyen used 0.37 m per net

5. Esperanza usually buys avocados for $0.94 apiece. During a sale, she gets 5 avocados for $4.10. How much money did she save per avocado? Use a tape diagram and show your calculations.

0.82
5\|4.10
40
10
10
0

0.94
− 0.82
0.12



1 avocado = $0.82

Esperanza saves $0.12 per avocado

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Name _____ Date _____

1. Draw place value disks on the place value chart to solve. Show each step using the standard algorithm.

a. 5.241 ÷ 3 = _____

Ones	Tenths	Hundredths	Thousandths
0			
0			
0			

$$\begin{array}{r} 1.747 \\ 3\overline{)5.241} \\ -3 \\ \hline 22 \\ -21 \\ \hline 14 \\ -12 \\ \hline 21 \\ -21 \\ \hline 0 \end{array}$$

b. 5.372 ÷ 4 = _____

Ones	Tenths	Hundredths	Thousandths
0			
0			

$$\begin{array}{r} 1.343 \\ 4\overline{)5.372} \\ -4 \\ \hline 13 \\ -12 \\ \hline 17 \\ -16 \\ \hline 12 \\ -12 \\ \hline 0 \end{array}$$

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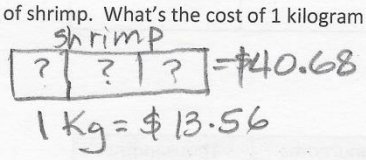
2. Solve using the standard algorithm.

a. $0.64 \div 4 =$ 0.16	b. $6.45 \div 5 =$ 1.29	c. $16.404 \div 6 =$ 2.734
0.16 4 | 0.64 4 24 24 0	1.29 5 | 6.45 5 14 10 45 45 0	2.734 6 | 16.404 12 44 42 20 18 24 24 0

3. Mrs. Mayuko paid $40.68 for 3 kg of shrimp. What's the cost of 1 kilogram of shrimp?

13.56
3 | 40.68
3
10
9
16
15
18
18
0



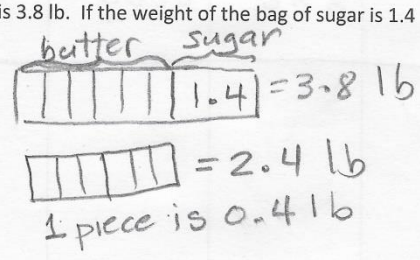
1 Kg = $13.56

A Kilogram of shrimp costs $13.56

4. The total weight of 6 pieces of butter and a bag of sugar is 3.8 lb. If the weight of the bag of sugar is 1.4 lb, what is the weight of each piece of butter?

3.8
− 1.4
2.4

0.4
6 | 2.4
24
0



One piece of butter weighs 0.4 lb

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Name _____ Date _____

1. Draw place value disks on the place value chart to solve. Show each step in the standard algorithm.

a. 0.5 ÷ 2 = 0.25

Ones	●	Tenths	Hundredths	Thousandths

0.25
2 | 0.5 0
−4
10
−10
0

b. 5.7 ÷ 4 = _____

Ones	●	Tenths	Hundredths	Thousandths

1.425
4 | 5.7 0 0
−4
17
16
10
−8
20
−20
0

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2. Solve using the standard algorithm.

a. 0.9 ÷ 2 = 0.45 2 ⟌ 0.9 8 10 −10 0	b. 9.1 ÷ 5= 1.82 5 ⟌ 9.1 −5 41 −40 10 −10 0	c. 9 ÷ 6 = 1.5 6 ⟌ 9 6 30 −30 0
d. 0.98 ÷ 4 = 0.245 4 ⟌ 0.98 8 18 −16 20 −20 0	e. 9.3 ÷ 6 = 1.55 6 ⟌ 9.3 −6 33 −30 30 −30 0	f. 91 ÷ 4 = 22.75 4 ⟌ 91 −8 11 −8 30 −28 20 −20 0

3. Six bakers shared 7.5 kilograms of flour equally. How much flour did they each receive?

1.25
6 ⟌ 7.5
−6
15
−12
30
−30

They received 1.25 Kilograms each.

4. Mrs. Henderson makes punch by mixing 10.9 liters of apple juice, 0.6 liters of orange juice, and 8 liters of ginger ale. She pours the mixture equally into 6 large punch bowls. How much punch is in each bowl? Express your answer in liters.

Apple juice 10.9 liters
Orange juice 0.6 liters
Ginger ale 8. liters

10.9
+ 8.0
0.6
19.5

3.25
6 ⟌ 19.5
−18
15
−12
30
−30
0

Each bowl has 3.25 liters

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Name _____ Date _____

1. Draw place value disks on the place value chart to solve. Show each step in the standard algorithm.

a. 0.7 ÷ 4 = 0.175

Ones	●	Tenths	Hundredths	Thousandths

$$\begin{array}{r} 0.175 \\ 4\overline{)0.70} \\ -4 \\ \hline 30 \\ -28 \\ \hline 20 \\ -20 \\ \hline 0 \end{array}$$

b. 8.1 ÷ 5 = 1.62

Ones	●	Tenths	Hundredths	Thousandths

$$\begin{array}{r} 1.62 \\ 5\overline{)8.1} \\ -5 \\ \hline 31 \\ -30 \\ \hline 10 \\ -10 \\ \hline 0 \end{array}$$

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2. Solve using the standard algorithm.

a. $0.7 \div 2 =$

$$\begin{array}{r} 0.35 \\ 2\overline{)0.7} \\ 6 \\ \hline 10 \\ 10 \\ \hline 0 \end{array}$$

b. $3.9 \div 6 =$

$$\begin{array}{r} 0.65 \\ 6\overline{)3.9} \\ 36 \\ \hline 30 \\ 30 \\ \hline 0 \end{array}$$

c. $9 \div 4 =$

$$\begin{array}{r} 2.25 \\ 4\overline{)9} \\ 8 \\ \hline 10 \\ 8 \\ \hline 20 \\ 20 \\ \hline 0 \end{array}$$

d. $0.92 \div 2 =$

$$\begin{array}{r} 0.46 \\ 2\overline{)0.92} \\ 8 \\ \hline 12 \\ 12 \\ \hline 0 \end{array}$$

e. $9.4 \div 4 =$

$$\begin{array}{r} 2.35 \\ 4\overline{)9.4} \\ 8 \\ \hline 14 \\ 12 \\ \hline 20 \\ 20 \\ \hline 0 \end{array}$$

f. $91 \div 8 =$

$$\begin{array}{r} 11.375 \\ 8\overline{)91} \\ 8 \\ \hline 11 \\ 8 \\ \hline 30 \\ 24 \\ \hline 60 \\ 56 \\ \hline 40 \\ 40 \\ \hline 0 \end{array}$$

3. A rope 8.7 meters long is cut into 5 equal pieces. How long is each piece?

$$\begin{array}{r} 1.74 \\ 5\overline{)8.7} \\ 5 \\ \hline 37 \\ 35 \\ \hline 20 \\ 20 \\ \hline 0 \end{array}$$

[?][?][?][?][?] = 8.7m

pieces

Each piece is 8.7m long

4. Yasmine bought 6 gallons of apple juice. After filling up 4 bottles of the same size with apple juice, she had 0.3 gallon of apple juice left. How many gallons of apple juice are in each container?

Apple juice 6 gallons
bottles 4
Juice left 0.3 gallon

$6.0 - 0.3 = 5.7$

[?][.][?] = 6

0.3

[?][?][.][?] = 5.7

$$\begin{array}{r} 1.425 \\ 4\overline{)5.7} \\ 4 \\ \hline 17 \\ 16 \\ \hline 10 \\ 8 \\ \hline 20 \\ 20 \\ \hline 0 \end{array}$$

There are 1.425 gallons of apple juice in each container

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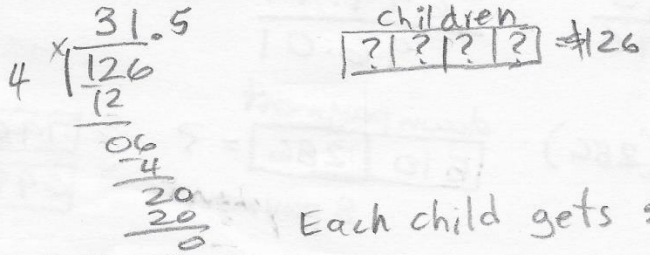
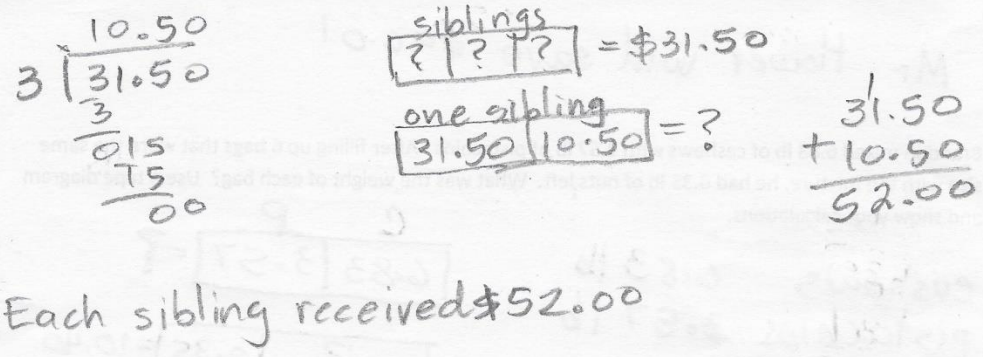
Name _____ Date _____

Solve.

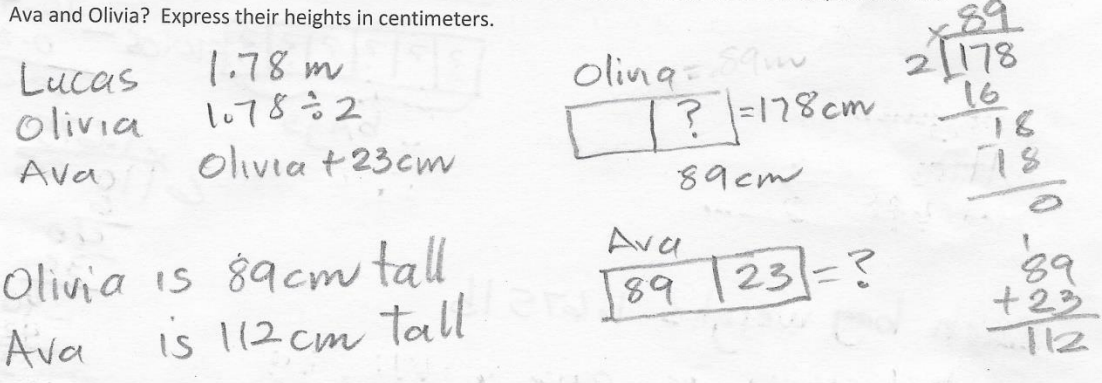
1. Mr. Frye distributed $126 equally among his 4 children for their weekly allowance.
   a. How much money did each child receive?



   b. John, the oldest child, paid his siblings to do his chores. If John pays his allowance equally to his brother and two sisters, how much money will each of his siblings have received in all?



2. Ava is 23 cm taller than Olivia, and Olivia is half the height of Lucas. If Lucas is 1.78 m tall, how tall are Ava and Olivia? Express their heights in centimeters.



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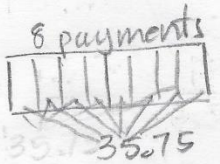
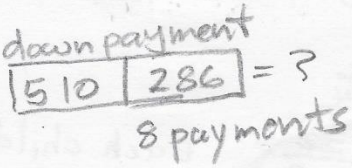
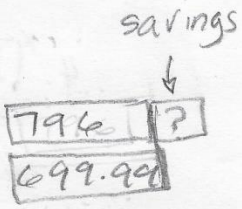
3. Mr. Hower can buy a computer with a down payment of $510 and 8 monthly payments of $35.75. If he pays cash for the computer, the cost is $699.99. How much money will he save if he pays cash for the computer instead of paying for it in monthly payments?

$$\begin{array}{r} {}^{4}{}^{6}{}^{4} \\ 35.75 \\ \times\ 8 \\ \hline 286.00 \end{array} \qquad \begin{array}{r} 510 \\ +\ 286 \\ \hline 796 \end{array} \qquad \begin{array}{r} 796.00 \\ -\ 699.99 \\ \hline 96.01 \end{array}$$



$= ?\ (286)$

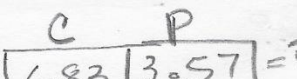




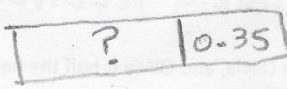
Mr. Hower will save $96.01

4. Brandon mixed 6.83 lb of cashews with 3.57 lb of pistachios. After filling up 6 bags that were the same size with the mixture, he had 0.35 lb of nuts left. What was the weight of each bag? Use a tape diagram and show your calculations.

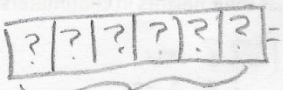
cashews 6.83 lb
pistachios 3.57 lb



$$\begin{array}{r} {}^{1}{}^{1} \\ 6.83 \\ +\ 3.57 \\ \hline 10.40 \end{array}$$



$$\begin{array}{r} 10.40 \\ -\ 0.35 \\ \hline 10.05 \end{array}$$



$$6 \overline{)\ 10.05} \quad 1.675$$

$$\begin{array}{r} 6 \\ \hline 40 \\ -\ 36 \\ \hline 45 \\ -\ 42 \\ \hline 30 \\ -\ 30 \\ \hline 0 \end{array}$$

Each bag weighs 1.675 lb

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5. The bakery bought 4 bags of flour containing 3.5 kg each. 0.475 kg of flour is needed to make a batch of muffins, and 0.65 kg is needed to make a loaf of bread.

   a. If 4 batches of muffins and 5 loaves of bread are baked, how much flour will be left? Give your answer in kilograms.

flour $4 \times 3.5 = 14$ kg

batches of muffins 4×0.475 kg $= 1.9$ kg

loaves of bread 5×0.65 kg $= 3.25$ kg

$3.25 + 1.9 = 5.15$

$14.00 - 5.15 = 8.85$

$3.5 \times 4 = 14.0$

$0.475 \times 4 = 1.900$

$0.65 \times 5 = 3.25$

There will be 8.85 kg of flour left

   b. The remaining flour is stored in bins that hold 3 kg each. How many bins will be needed to store the flour? Explain your answer.

$8.85 \div 3 = 2.95$

Each container holds 3 kilograms. Therefore 2 containers will be full and one will hold 0.95 kilograms.

3 bins will be needed

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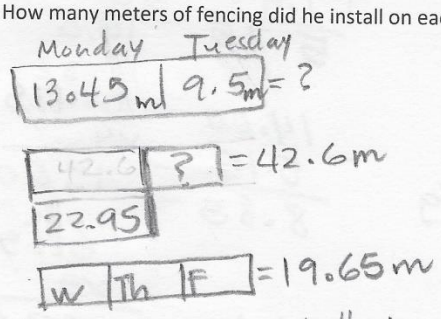
Name _____ Date _____

Solve using tape diagrams.

1. A gardener installed 42.6 meters of fencing in a week. He installed 13.45 meters on Monday and 9.5 meters on Tuesday. He installed the rest of the fence in equal lengths on Wednesday through Friday. How many meters of fencing did he install on each of the last three days?



$$\begin{array}{r} 6.55 \\ 3\overline{)19.65} \\ -18 \\ \hline 16 \\ -15 \\ \hline 15 \\ -15 \\ \hline 0 \end{array}$$

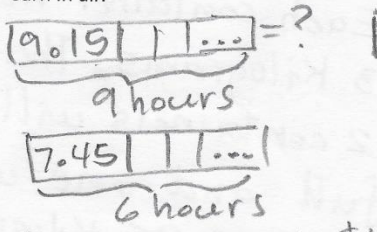
$$\begin{array}{r} {\scriptstyle 1}13.45 \\ 9.5 \\ \hline 22.95 \end{array}$$

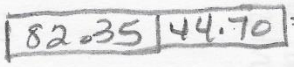
$$\begin{array}{r} 42.60 \\ -22.95 \\ \hline 19.65 \end{array}$$

The gardener installed 6.55m of fence each day.

2. Jenny charges $9.15 an hour to babysit toddlers and $7.45 an hour to babysit school-aged children.

   a. If Jenny babysat toddlers for 9 hours and school-aged children for 6 hours, how much money did she earn in all?





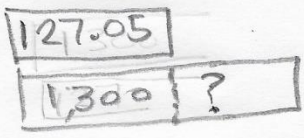
$$\begin{array}{r} {\scriptstyle 1}9.15 \\ \times 9 \\ \hline 82.35 \end{array}$$

$$\begin{array}{r} {\scriptstyle 2\ 3}7.45 \\ \times 6 \\ \hline 44.70 \end{array}$$

$$\begin{array}{r} {\scriptstyle 1\ \ 1}82.35 \\ +44.70 \\ \hline 127.05 \end{array}$$

Jenny earned $127.05 in all

   b. Jenny wants to earn $1,300 by the end of the summer. How much more will she need to earn to meet her goal?



$$\begin{array}{r} 1300.00 \\ -127.05 \\ \hline 1172.95 \end{array}$$

Jenny needs to earn $1172.95

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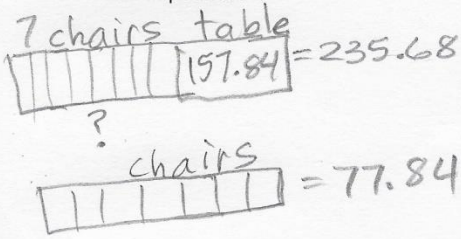
3. A table and 8 chairs weigh 235.68 lb together. If the table weighs 157.84 lb, what is the weight of one chair in pounds?

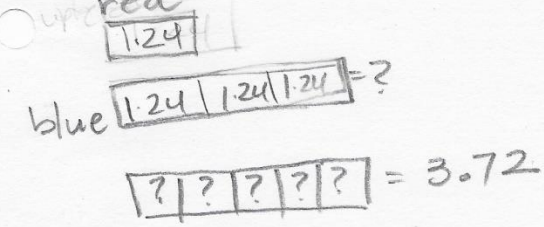


235.68
157.84
77.84

9.73
8 | 77.84
72
58
56
24
24
0

One chair weighs 9.73 lb

4. Mrs. Cleaver mixes 1.24 liters of red paint with 3 times as much blue paint to make purple paint. She pours the paint equally into 5 containers. How much blue paint is in each container? Give your answer in liters.



3.72
1.24
4.96

1
1.24
× 3
3.72

0.744
5 | 3.72
35
22
20
20
20
0

There are 0.744 liters of blue paint in each container

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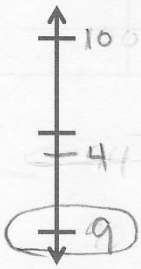
3. 0.994

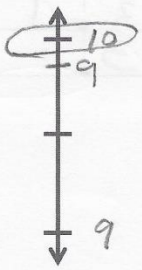
Tens	Ones	Tenths	Hundredths	Thousandths
	0	9	9	4

a. Hundredths



0.99

b. Tenths



1.0

c. Ones

1.0

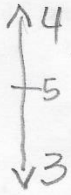
d. Tens

00.

4. For open international competition, the throwing circle in the men's shot put must have a diameter of 2.135 meters. Round this number to the nearest hundredth. Use a number line to show your work.

2.135
↑ hundredth

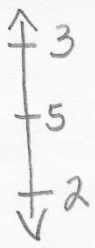
2.14

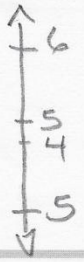


5. Jen's pedometer said she walked 2.549 miles. She rounded her distance to 3 miles. Her brother rounded her distance to 2.5 miles. When they argued about it, their mom said they were both right. Explain how that could be true. Use number lines and words to explain your reasoning.

2.549

2.549





Jen rounded to the ones. Her brother rounded to the tenths. Jen rounded up. Her brother rounded down.

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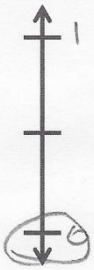
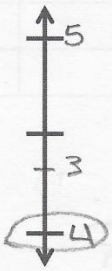
Name _____ Date _____

Fill in the table, and then round to the given place. Label the number lines to show your work. Circle the rounded number.

1. 4.3

a. Hundredths b. Tenths c. Ones

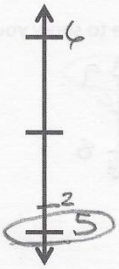




Tens	Ones	Tenths	Hundredths	Thousandths
	4	0	0	
	4	6		
	4			

2. 225.286

a. Hundredths b. Ones c. Tens



225.29 225 230

Tens	Ones	Tenths	Hundredths	Thousandths
2	5	2	9	
2	5			
2	3	0		

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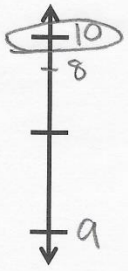
3. 8.984

	Tens	Ones	Tenths	Hundredths	Thousandths
a	9	8	9	8	
b		9	0		
c		9	0		
d	1	0			

a. Hundredths

b. Tenths



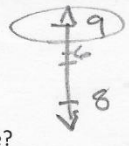
c. Ones

d. Tens

4. On a Major League Baseball diamond, the distance from the pitcher's mound to home plate is 18.386 meters.

a. Round this number to the nearest hundredth of a meter. Use a number line to show your work.

18.386 18.39



b. How many centimeters is it from the pitcher's mound to home plate?

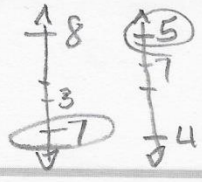
18.39m = 1839cm

5. Jules reads that 1 pint is equivalent to 0.473 liters. He asks his teacher how many liters there are in a pint. His teacher responds that there are about 0.47 liters in a pint. He asks his parents, and they say there are about 0.5 liters in a pint. Jules says they are both correct. How can that be true? Explain your answer.

1 pint = 0.473 liters

0.473 = 0.47

0.473 = 0.5



The teacher rounds to hundredths. Parents round to tenths

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Hundreds	Tens	Ones	•	Tenths	Hundredths	Thousandths

hundreds to thousandths place value chart

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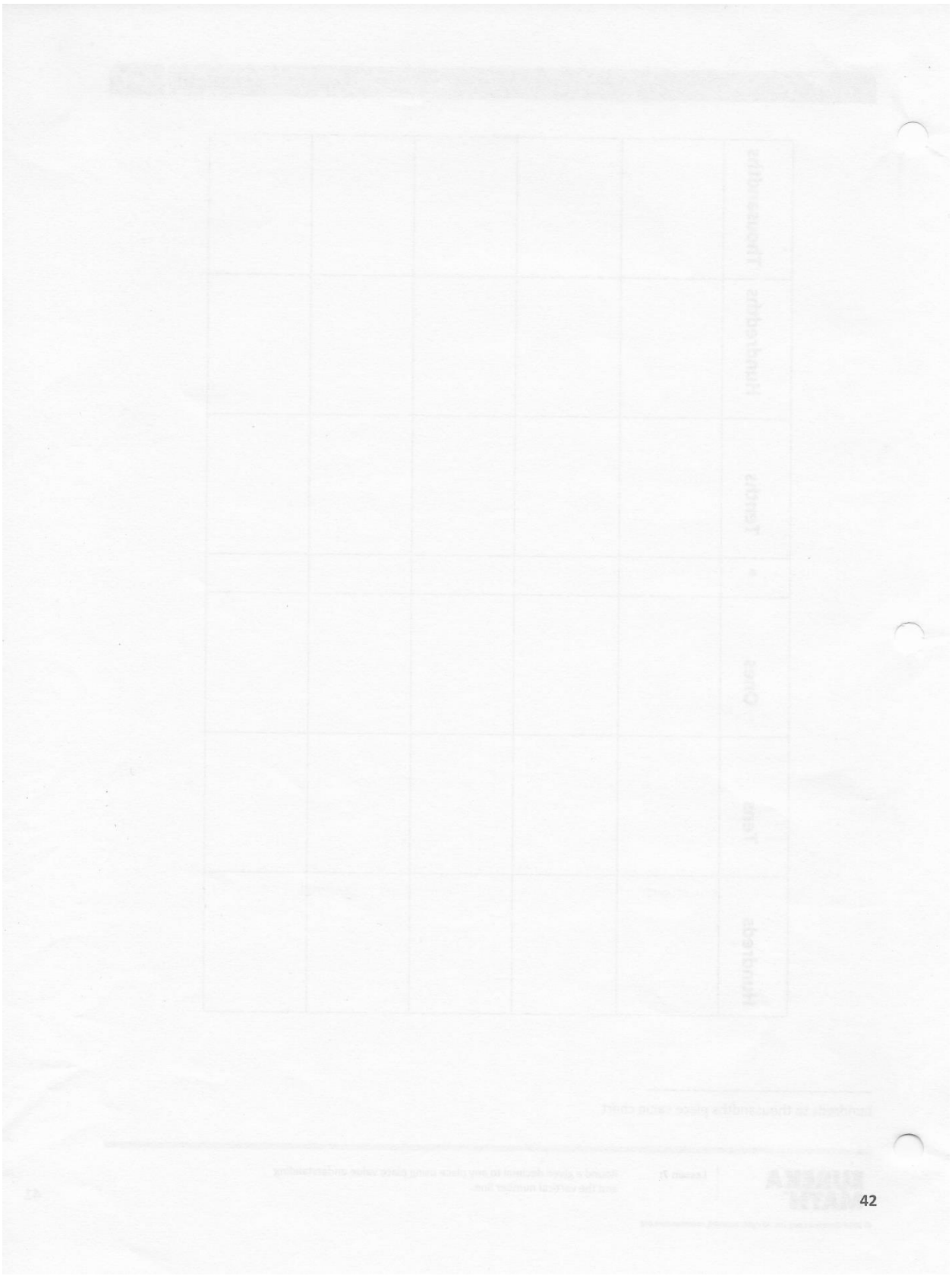
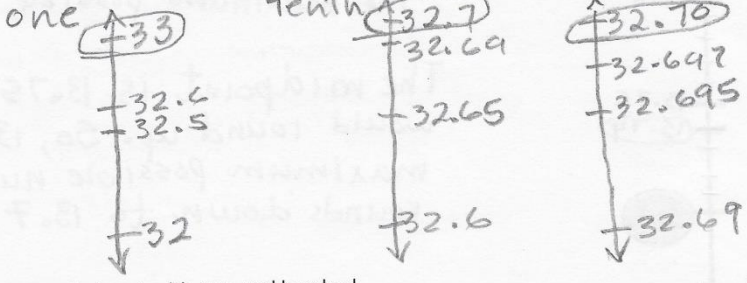


Name _____ Date _____

1. Write the decomposition that helps you, and then round to the given place value. Draw number lines to explain your thinking. Circle the rounded value on each number line.

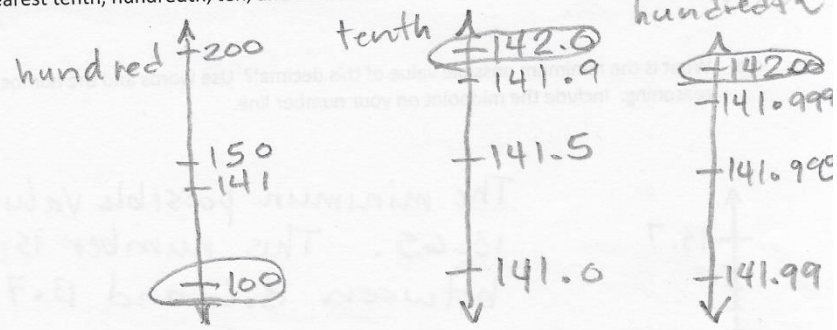
   a. Round 32.697 to the nearest tenth, hundredth, and one.

32.697



   b. Round 141.999 to the nearest tenth, hundredth, ten, and hundred.

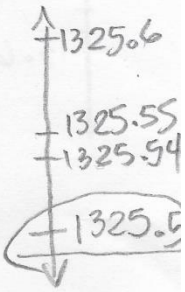
141.999



2. A root beer factory produces 132,554 cases in 100 days. About how many cases does the factory produce in 1 day? Round your answer to the nearest tenth of a case. Show your thinking on the number line.

132,554 ÷ 100 = 1325.54

1325.54 ≈ 1,325.5



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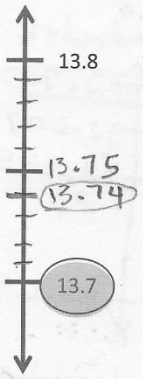
3. A decimal number has two digits to the right of its decimal point. If we round it to the nearest tenth, the result is 13.7.

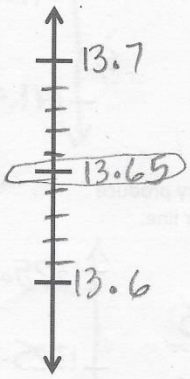
   a. What is the maximum possible value of this number? Use words and the number line to explain your reasoning. Include the midpoint on your number line.



The maximum possible number is 13.74

The midpoint is 13.75. This point would round up. So, 13.74 is the maximum possible number that rounds down to 13.7

   b. What is the minimum possible value of this decimal? Use words and the number line to explain your reasoning. Include the midpoint on your number line.



The minimum possible value would be 13.65. This number is the midpoint between 13.6 and 13.7

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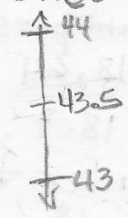
Name _____ Date _____

1. Write the decomposition that helps you, and then round to the given place value. Draw number lines to explain your thinking. Circle the rounded value on each number line.

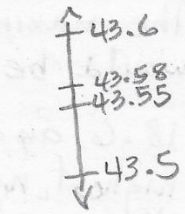
   a. 43.586 to the nearest tenth, hundredth, and one.

43.586

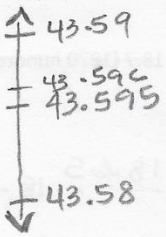
ones: 44



tenths: 43.6



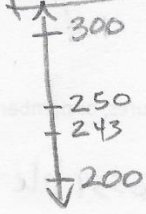
hundredths: 43.59



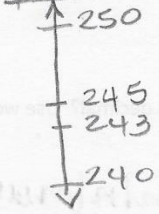
   b. 243.875 to nearest tenth, hundredth, ten, and hundred.

243.875

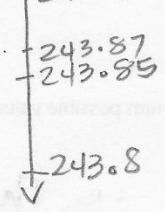
hundreds: 200



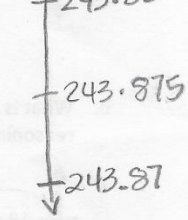
tens: 240



tenths: 243.9



hundredths: 243.88



2. A trip from New York City to Seattle is 2,852.1 miles. A family wants to make the drive in 10 days, driving the same number of miles each day. About how many miles will they drive each day? Round your answer to the nearest tenth of a mile.

2,852.1 ÷ 10 = 285.21

285.2

The family will drive 285.2 miles daily

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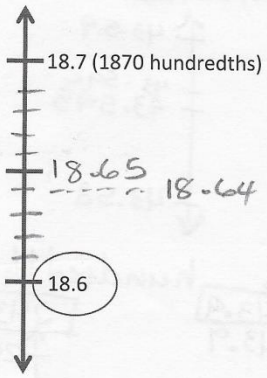
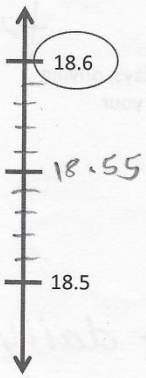
3. A decimal number has two digits to the right of its decimal point. If we round it to the nearest tenth, the result is 18.6.

   a. What is the maximum possible value of this number? Use words and the number line to explain your reasoning. Include the midpoint on your number line.



The maximum possible value would be 18.64. Between 18.6 and 18.7, 18.64 is the highest number that rounds down to 18.6.

   b. What is the minimum possible value of this decimal? Use words, pictures, or numbers to explain your reasoning.



The minimum possible value is 18.55. This number is the midpoint between 18.5 and 18.6. Therefore, is the least number that rounds up to 18.6.

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Name _____ Date _____

1. Solve, and then write the sum in standard form. Use a place value chart if necessary.

   a. 1 tenth + 2 tenths = 3 tenths = 0.3

   b. 14 tenths + 9 tenths = 23 tenths = 2 one(s) 3 tenth(s) = 23

   c. 1 hundredth + 2 hundredths = 3 hundredths = 0.03

   d. 27 hundredths + 5 hundredths = 32 hundredths = 3 tenths 2 hundredths = 0.32

   e. 1 thousandth + 2 thousandths = 3 thousandths = 0.003

   f. 35 thousandths + 8 thousandths = 43 thousandths = 4 hundredths 3 thousandths = 0.043

   g. 6 tenths + 3 thousandths = 603 thousandths = 0.603

   h. 7 ones 2 tenths + 4 tenths = 76 tenths = 7.6

   i. 2 thousandths + 9 ones 5 thousandths = 9007 thousandths = 9.007

2. Solve using the standard algorithm.

a. 0.3+ 0.82 = 1.12 0.3 + 0.82 1.12	b. 1.03 + 0.08 = 1.11 1 1.03 + 0.08 1.11
c. 7.3 + 2.8 = 10.1 1 7.3 + 2.8 10.1	d. 57.03 + 2.08 = 60.11 1 1 57.03 + 2.08 60.11

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e. 62.573 + 4.328 = 66.901	f. 85.703 + 12.197 = 97.9
1 1 62.573 + 4.328 66.901	1 1 85.703 +12.197 97.900

3. Van Cortlandt Park's walking trail is 1.02 km longer than Marine Park. Central Park's walking trail is 0.242 km longer than Van Cortlandt's.

   a. Fill in the missing information in the chart below.

1
1.28
+ 1.02
2.30
Van Cortland's trail

New York City Walking Trails	
Central Park	2.542 km
Marine Park	1.28 km
Van Cortlandt Park	2.30 km

+ 2.30
0.242
2.542

   b. If a tourist walked all 3 trails in a day, how many kilometers would he or she have walked?

1 1
2.542
+ 2.3
1.28
6.122

She would have walked 6.122 km

4. Meyer has 0.64 GB of space remaining on his iPod. He wants to download a pedometer app (0.24 GB), a photo app (0.403 GB), and a math app (0.3 GB). Which combinations of apps can he download? Explain your thinking.

P=0.24
Ph=0.403
M=0.3
IPod=0.64

Meyer can download P and M or Ph and M. Meyer cannot download P and Ph because there is not enough memory left

.24
.403
.643

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Name _____ Date _____

1. Solve.

   a. 3 tenths + 4 tenths = 7 tenths

   b. 12 tenths + 9 tenths = 21 tenths = 2 one(s) 1 tenth(s)

   c. 3 hundredths + 4 hundredths = 34 hundredths

   d. 27 hundredths + 7 hundredths = 34 hundredths = 3 tenths 4 hundredths

   e. 4 thousandths + 3 thousandths = 7 thousandths

   f. 39 thousandths + 5 thousandths = 44 thousandths = 4 hundredths 4 thousandths

   g. 5 tenths + 7 thousandths = 507 thousandths

   h. 4 ones 4 tenths + 4 tenths = 48 tenths

   i. 8 thousandths + 6 ones 8 thousandths = 6.016 thousandths

$$\begin{array}{r} {}^{1}.008 \\ +6.008 \\ \hline 6.016 \end{array}$$

2. Solve using the standard algorithm.

a. 0.4 + 0.7 = 1.1 $\begin{array}{r} 0.4 \\ +0.7 \\ \hline 1.1 \end{array}$	b. 2.04 + 0.07 = 2.11 $\begin{array}{r} {}^{1}2.04 \\ +0.07 \\ \hline 2.11 \end{array}$
c. 6.4 + 3.7 = 10.1 $\begin{array}{r} {}^{1}6.4 \\ +3.7 \\ \hline 10.1 \end{array}$	d. 56.04 + 3.07 = 59.11 $\begin{array}{r} {}^{1}56.04 \\ +\ 3.07 \\ \hline 59.11 \end{array}$

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e. 72.564 + 5.137 = 77.701	f. 75.604 + 22.296 = 97.9
11 72.564 5.137 77.701	1 1 75.604 + 22.296 97.900

3. Walkway Over the Hudson, a bridge that crosses the Hudson River in Poughkeepsie, is 2.063 kilometers long. Anping Bridge, which was built in China 850 years ago, is 2.07 kilometers long.

   a. What is the total span of both bridges? Show your thinking.

2.063
2.07

2.063
+ 2.07
4.133

The total span is 4.133 km

   b. Leah likes to walk her dog on the Walkway Over the Hudson. If she walks across and back, how far will she and her dog walk?

1
2.063
X2
4.226

They will walk 4.226 km

4. For his parents' anniversary, Danny spends $5.87 on a photo. He also buys a balloon for $2.49 and a box of strawberries for $4.50. How much money does he spend all together?

$ 5.87
$ 2.49
$ 4.50

1 1
5.87
+ 2.49
4.50
12.86

He spends $12.86

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Name _____ Date _____

1. Subtract, writing the difference in standard form. You may use a place value chart to solve.

   a. 5 tenths – 2 tenths = 3 tenths = 0.3

   b. 5 ones 9 thousandths – 2 ones = 3 ones 9 thousandths = 3.009

   c. 7 hundreds 8 hundredths – 4 hundredths = 7 hundreds 4 hundredths = 700.04

   d. 37 thousandths – 16 thousandths = 21 thousandths = 0.021

   0.037
   −0.016
   0.021

2. Solve using the standard algorithm.

a. 1.4 – 0.7 = 0.7 1.4 − 0.7 0.7	b. 91.49 – 0.7 = 90.79 91.49 − 0.7 90.79	c. 191.49 – 10.72 = 180.77 191.49 − 10.72 180.77
d. 7.148 – 0.07 = 7.078 7.148 − 0.07 7.078	e. 60.91 – 2.856 = 58.054 60.91 − 2.856 58.054	f. 361.31 – 2.841 = 358.469 361.31 − 2.841 358.469

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3. Solve.

a. 10 tens – 1 ten 1 tenth	b. 3 – 22 tenths	c. 37 tenths – 1 one 2 tenths
100. − 10.1 89.9	3. − 2.2 0.8	3.7 1.2 2.5
d. 8 ones 9 hundredths – 3.4	**e. 5.622 – 3 hundredths**	**f. 2 ones 4 tenths – 0.59**
8.09 − 3.4 4.69	5.622 − .03 5.592	2.4 − 0.59 1.81

4. Mrs. Fan wrote *5 tenths minus 3 hundredths* on the board. Michael said the answer is 2 tenths because 5 minus 3 is 2. Is he correct? Explain.

0.5
− 0.03
0.47

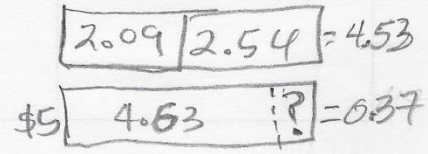
Michael is wrong. The 5 are tenths, but the 3 are hundredths.

5. A pen costs $2.09. It costs $0.45 less than a marker. Ken paid for one pen and one marker with a five dollar bill. Use a tape diagram with calculations to determine his change.

Pen $2.09
Marker $2.54

+2.09
2.54
4.63

2.09
+0.45
2.54



−5.00
4.63
0.37

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Name _____ Date _____

1. Subtract. You may use a place value chart.

   a. 9 tenths – 3 tenths = 6 tenths

   b. 9 ones 2 thousandths – 3 ones = 6 ones 2 thousandths

   c. 4 hundreds 6 hundredths – 3 hundredths = 4 hundreds 3 hundredths

   d. 56 thousandths – 23 thousandths = 33 thousandths = 3 hundredths 3 thousandths

2. Solve using the standard algorithm.

a. 1.8 – 0.9 = 0.9 1.8 −0.9 0.9	b. 41.84 – 0.9 = 40.94 41.84 − 0.9 40.94	c. 341.84 – 21.92 = 319.92 341.84 − 21.92 319.92
d. 5.182 – 0.09 = 5.092 5.182 − 0.09 5.092	e. 50.416 – 4.25 = 46.166 50.416 − 4.25 46.166	f. 741 – 3.91 = 737.09 741.00 3.91 737.09

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3. Solve.

a. 30 tens – 3 tens 3 tenths 300.0 − 30.3 369.7	b. 5 – 16 tenths 5.0 − 1.6 3.4	c. 24 tenths – 1 one 3 tenths 2.4 − 1.3 1.1
d. 6 ones 7 hundredths – 2.3 6.07 − 2.3 3.77	e. 8.246 – 5 hundredths 8.246 − .05 8.196	f. 5 ones 3 tenths – 0.53 5.3 0.53 4.77

4. Mr. House wrote *8 tenths minus 5 hundredths* on the board. Maggie said the answer is 3 hundredths because 8 minus 5 is 3. Is she correct? Explain.

0.8
− .05
0.75

Maggie is wrong. 8 tenths minus 5 hundredths is 75 hundredths

5. A clipboard costs $2.23. It costs $0.58 more than a notebook. Lisa bought two clipboards and one notebook. She paid with a ten dollar bill. How much change does Lisa get? Use a tape diagram to show your thinking.

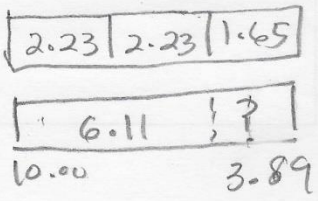
Clipboard $2.23
notebook $1.65

2.23
+ 0.58
1.65

2.23
× 2
4.46

4.46
+ 1.65
6.11

10.00
− 6.11
3.89



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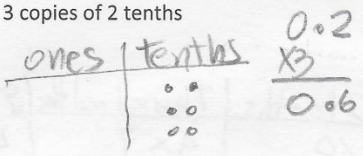
Name _____ Date _____

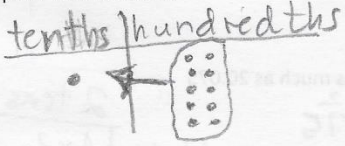
1. Solve by drawing disks on a place value chart. Write an equation, and express the product in standard form.

a. 3 copies of 2 tenths



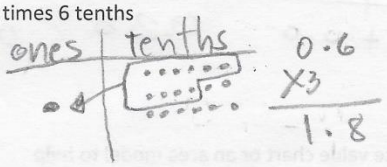
0.2
×3
0.6

b. 5 groups of 2 hundredths



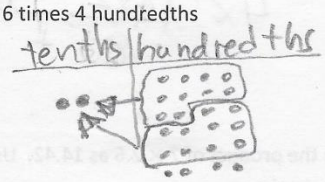
0.02
×5
0.10

c. 3 times 6 tenths



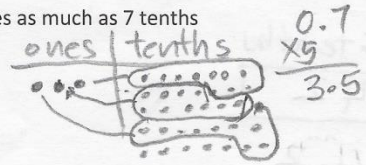
0.6
×3
1.8

d. 6 times 4 hundredths



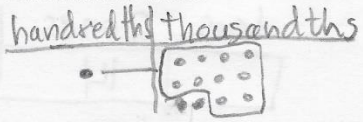
0.04
×6
0.24

e. 5 times as much as 7 tenths



0.7
×5
3.5

f. 4 thousandths times 3



1
0.004
×3
0.012

2. Draw a model similar to the one pictured below for Parts (b), (c), and (d). Find the sum of the partial products to evaluate each expression.

a. 7 × 3.12

	3 ones	+ 1 tenth	+ 2 hundredths
7	7 × 3 ones	7 × 1 tenth	7 × 2 hundredths

21 + 7 + 0.14 = 21.84

1
3.12
×7
21.84

b. 6 × 4.25

	4 ones	2 tenths	5 hundredths
6	24 ones	12 tenths	30 hundredths

24 + 1.2 + 0.30 = 25.50

1 3
4.25
×6
25.50

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c. 3 copies of 4.65

3×	4 ones	6 tenths	5 hundredths
	3×4	3×6	3×5

12 + 1.8 + 0.15

$$\begin{array}{r} {\scriptstyle 1\ 1} \\ 4.65 \\ \times\ 3 \\ \hline 13.95 \end{array}$$

d. 4 times as much as 20.075

$$\begin{array}{r} {\scriptstyle 3\ 2} \\ 20.075 \\ \times\ 4 \\ \hline 80.300 \end{array}$$

4×	2 tens	0 ones	0 tenths	7 hundredths	5 thousandths
	4×2	4×0	4×0	4×7	4×5

180 + 0 + 0.0 + 0.28 + 0.020

3. Miles incorrectly gave the product of 7 × 2.6 as 14.42. Use a place value chart or an area model to help Miles understand his mistake.

$$\begin{array}{r} {\scriptstyle 4} \\ 2.6 \\ \times\ 7 \\ \hline 16.2 \end{array}$$

	tens	2 ones	6 tenths
		14	42

14 + 4.2

4. Mrs. Zamir wants to buy 8 protractors and some erasers for her classroom. She has $30. If protractors cost $2.65 each, how much will Mrs. Zamir have left to buy erasers?

$$\begin{array}{r} {\scriptstyle 5\ 4} \\ \$\ 2.65 \\ \times\ 8 \\ \hline \$\ 21.20 \end{array}$$

$$\begin{array}{r} \$\ 30.00 \\ -\ \$\ 21.20 \\ \hline \$\ 18.80 \end{array}$$

Mrs Zamir will have $18.80 for erasers

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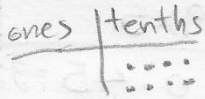
Name _____ Date _____

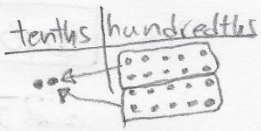
1. Solve by drawing disks on a place value chart. Write an equation, and express the product in standard form.

a. 2 copies of 4 tenths



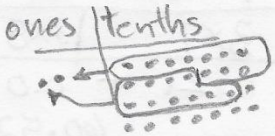
0.4 × 2 = 0.8

b. 4 groups of 5 hundredths



0.05 × 4 = 0.20

c. 4 times 7 tenths

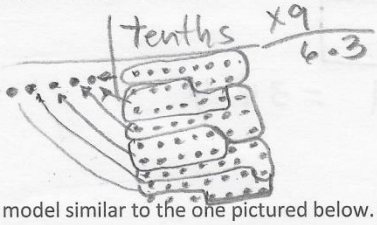


0.7 × 4 = 2.8

d. 3 times 5 hundredths

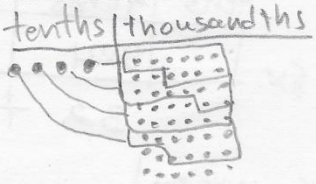
0.05 × 3 = 0.15

e. 9 times as much as 7 tenths



0.7 × 9 = 6.3

f. 6 thousandths times 8



0.006 × 8 = 0.048

2. Draw a model similar to the one pictured below. Find the sum of the partial products to evaluate each expression.

a. 4 × 6.79

	6 ones	+ 7 tenths	+ 9 hundredths
4	4 × 6 ones	4 × 7 tenths	4 × 9 hundredths

3 3
6.79 × 4 = 27.16

24 + 2.8 + 0.36 = 27.16

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b. 6 × 7.49

$$\begin{array}{r} {\scriptstyle 2\ 5} \\ 7.49 \\ \times\ 6 \\ \hline 44.94 \end{array}$$

7 ones 4 tenths 9 hundredths

6×	6×7	6×4	6×9

42 + 2.4 + 0.54 = 44.94

c. 9 copies of 3.65

$$\begin{array}{r} {\scriptstyle 5\ 4} \\ 3.65 \\ \times\ 9 \\ \hline 32.85 \end{array}$$

3 ones 6 tenths 5 hundredths

9×	9×3	9×6	9×5

27 + 5.4 + 0.45 = 32.85

d. 3 times 20.175

$$\begin{array}{r} {\scriptstyle 2\ 1} \\ 20.175 \\ \times\ 3 \\ \hline 60.525 \end{array}$$

2 tenths 0 ones 1 tenths 7 hundredths 5 thousandths

3×	3×2	3×0	3×1	3×7	3×5

60 + 0 + 0.3 + 0.21 + 0.015 = 60.525

3. Leanne multiplied 8 × 4.3 and got 32.24. Is Leanne correct? Use an area model to explain your answer.

$$\begin{array}{r} {\scriptstyle 2} \\ 4.3 \\ \times\ 8 \\ \hline 34.4 \end{array}$$

8×	tens	4 ones	3 tenths
		8×4	8×3

32 + 2.4 = 34.4

Leanne is wrong!

4. Anna buys groceries for her family. Hamburger meat is $3.38 per pound, sweet potatoes are $0.79 each, and hamburger rolls are $2.30 a bag. If Anna buys 3 pounds of meat, 5 sweet potatoes, and 1 bag of hamburger rolls, what will she pay in all for the groceries?

meat: $\begin{array}{r} {\scriptstyle 1\ 2} \\ \$3.38 \\ \times\ 3 \\ \hline \$10.14 \end{array}$

sweet potatoes: $\begin{array}{r} {\scriptstyle 3\ 4} \\ \$0.79 \\ \times\ 5 \\ \hline \$3.95 \end{array}$

rolls: $2.30

$$\begin{array}{r} {\scriptstyle 1\ \ \ 1} \\ \$10.14 \\ 3.95 \\ +\ 2.30 \\ \hline 16.39 \end{array}$$

Anna will pay $16.39

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Name _____ Date _____

1. Choose the reasonable product for each expression. Explain your reasoning in the spaces below using words, pictures, or numbers.

a. 2.5×4	0.1	1	(10)	100

2
2.5
×4
10.0

b. 3.14×7	2198	219.8	(21.98)	2.198

2
3.14
×7
21.98

c. 8×6.022	4.8176	(48.176)	481.76	4817.6

6.022
×8
48.176

d. 9×5.48	493.2	(49.32)	4.932	0.4932

4 7
5.48
×9
49.32

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2. Pedro is building a spice rack with 4 shelves that are each 0.55 meter long. At the hardware store, Pedro finds that he can only buy the shelving in whole meter lengths. Exactly how many meters of shelving does Pedro need? Since he can only buy whole number lengths, how many meters of shelving should he buy? Justify your thinking.

$$\begin{array}{r} {}^{2}0.55 \\ \times\ 4 \\ \hline 2.20 \end{array}$$

Pedro needs exactly 2.20 meters. So he needs to buy 3 m.

3. Marcel rides his bicycle to school and back on Tuesdays and Thursdays. He lives 3.62 kilometers away from school. Marcel's gym teacher wants to know about how many kilometers he bikes in a week. Marcel's math teacher wants to know exactly how many kilometers he bikes in a week. What should Marcel tell each teacher? Show your work.

$$\begin{array}{r} {}^{2}3.62 \\ \times\ 4 \\ \hline 14.48 \end{array}$$

Marcel rides exactly 14.48 Km or about 14 km.

4. The poetry club had its first bake sale, and they made $79.35. The club members are planning to have 4 more bake sales. Leslie said, "If we make the same amount at each bake sale, we'll earn $3,967.50." Peggy said, "No way, Leslie! We'll earn $396.75 after five bake sales." Use estimation to help Peggy explain why Leslie's reasoning is inaccurate. Show your reasoning using words, numbers, or pictures.

$$\begin{array}{r} {}^{3}{}^{1}{}^{2}79.35 \\ \times\ 4 \\ \hline 317.40 \end{array} \qquad \begin{array}{r} {}^{1}317.40 \\ +\ 79.35 \\ \hline 396.75 \end{array}$$

$79.35 \approx 80$

$80 \times 5 = 400$

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Name _____ Date _____

1. Choose the reasonable product for each expression. Explain your thinking in the spaces below using words, pictures, or numbers.

a.	2.1×3	0.63	(6.3)	63	630

2.1
×3
6.3

b.	4.27×6	2562	256.2	(25.62)	2.562

4.27
×6
25.62

c.	7×6.053	4237.1	423.71	(42.371)	4.2371

6.053
×7
42.371

d.	9×4.82	4.338	(43.38)	433.8	4338

4.82
×9
43.38

2. Yi Ting weighs 8.3 kg. Her older brother is 4 times as heavy as Yi Ting. How much does her older brother weigh in kilograms?

8.3
×4
33.2

Yi Ting's brother weighs 33.2 Kg

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3. Tim is painting his storage shed. He buys 4 gallons of white paint, and 3 gallons of blue paint. Each gallon of white paint costs $15.72, and each gallon of blue paints is $21.87. How much will Tim spend in all on paint?

white $15.72 × 4 = 62.88

blue $21.87 × 3 = 65.61

62.88 + 65.61 = 128.49

Tim will spend $128.49

4. Ribbon is sold at 3 yards for $6.33. Jackie bought 24 yards of ribbon for a project. How much did she pay?

24 ÷ 3 = 8

$6.33 × 8 = 50.64

or

2.11
3 | 6.33
6
03
3
03
-3
0

2.11 × 24 = 50.64

Jackie paid $50.64

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Name _____ Date _____

1. Complete the sentences with the correct number of units, and then complete the equation.

   a. 4 groups of 4 tenths is 1.6. 1.6 ÷ 4 = 0.4

   b. 8 groups of 4 hundredths is 0.32. 0.32 ÷ 8 = 0.04

   c. 7 groups of 12 thousandths is 0.084. 0.084 ÷ 7 = 0.012

   d. 5 groups of 4 tenths is 2.0. 2.0 ÷ 5 = 0.4

2. Complete the number sentence. Express the quotient in units and then in standard form.

   a. 4.2 ÷ 7 = 42 tenths ÷ 7 = 6 tenths = 0.6

   b. 2.64 ÷ 2 = 2 ones ÷ 2 + 64 hundredths ÷ 2
   = 1 ones + 32 hundredths
   = 1.32

   c. 12.64 ÷ 2 = 12 ones ÷ 2 + 64 hundredths ÷ 2
   = 6 ones + 32 hundredths
   = 6.32

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d. $4.26 \div 6 =$ 42 tenths $\div 6 +$ 6 hundredths $\div 6$

$=$ 7 tenths + 1 hundredth

$=$ 0.71

0.71
6 | 4.26
42
06

e. $4.236 \div 6 =$ 42 tenths $\div 6$ + 36 thousandths $\div 6$

$=$ 7 tenths + 6 thousandths

$=$ 0.706

0.706
4 | 4236
42
036
36
0

3. Find the quotients. Then, use words, numbers, or pictures to describe any relationships you notice between each pair of problems and quotients.

a. $32 \div 8 =$ 4 $\quad 3.2 \div 8 =$ 0.4

32 is 3.2×10 =

b. $81 \div 9 =$ 9 $\quad 0.081 \div 9 =$ 0.009

81 is $0.081 \times 10{,}000$

4. Are the quotients below reasonable? Explain your answers.

a. $5.6 \div 7 = 8$ No.

0.8
7 | 5.6
56
0

b. $56 \div 7 = 0.8$ No

8
7 | 56
56
0

0.08
7 | 0.56

c. $.56 \div 7 = 0.08$ Yes!

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5. 12.48 milliliters of medicine were separated into doses of 4 mL each. How many doses were made?

$$\begin{array}{r} 3.12 \\ 4\overline{)12.48} \\ \underline{12} \\ 0\,4 \\ \underline{4} \\ 0\,8 \\ \underline{8} \\ 0 \end{array}$$

There were 3 doses made

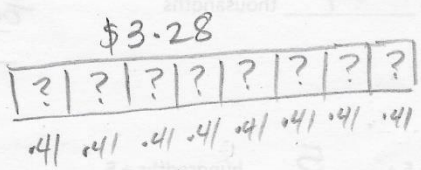
6. The price of milk in 2013 was around $3.28 a gallon. This was eight times as much as you would have probably paid for a gallon of milk in the 1950s. What was the cost for a gallon of milk during the 1950s? Use a tape diagram, and show your calculations.

2013 – $3.28

1950 – $0.41

$$\begin{array}{r} 0.41 \\ 8\overline{)3.28} \\ \underline{3\,2} \\ 0\,8 \\ \underline{8} \\ 0 \end{array}$$

The cost of milk would be $0.41 in 1950



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Name _____ Date _____

1. Complete the sentences with the correct number of units, and then complete the equation.

   a. 3 groups of 5 tenths is 1.5. 1.5 ÷ 3 = 0.5

   b. 6 groups of 4 hundredths is 0.24. 0.24 ÷ 6 = 0.4

   c. 5 groups of 9 thousandths is 0.045. 0.045 ÷ 5 = 0.09

2. Complete the number sentence. Express the quotient in units and then in standard form.

   a. 9.36 ÷ 3 = 9 ones ÷ 3 + 36 hundredths ÷ 3
   = 3 ones + 12 hundredths
   = 3.12

   b. 36.012 ÷ 3 = 36 ones ÷ 3 + 12 thousandths ÷ 3
   = 12 ones + 4 thousandths
   = 12.004

   c. 3.55 ÷ 5 = 35 tenths ÷ 5 + 5 hundredths ÷ 5
   = 0.7 + 0.01
   = 0.71

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d. 3.545 ÷ 5 = 35 tenths ÷ 5 + 45 thousandths ÷ 5
= 7 tenths + 9 thousandths
= 0.709

0.709
5 | 3.545
35
045
45
0

3. Find the quotients. Then, use words, numbers, or pictures to describe any relationships you notice between each pair of problems and quotients.

a. 21 ÷ 7 = 3 2.1 ÷ 7 = 0.3

21 is 2.1 × 10. The digits are the same. The decimal point moves one place

b. 48 ÷ 8 = 6 0.048 ÷ 8 = 0.006

48 is 0.048 × 1000. The digits are the same. The decimal point moves three places

4. Are the quotients below reasonable? Explain your answers.

a. 0.54 ÷ 6 = 9

0.09
6 | 0.54
54
0

No. 9 × 6 = 54. The quotient has to be 0.09 because the dividend is 0.54

b. 5.4 ÷ 6 = 0.9

0.9
6 | 5.4
54
0

Yes. 0.9 × 6 = 5.4

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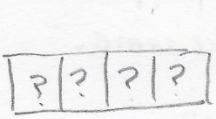
c. $54 \div 6 = 0.09$

$$\begin{array}{r} 9 \\ 6\overline{)54} \\ \underline{54} \\ 0 \end{array}$$

$9 \times 6 = 54$

No. $6 \times 0.09 = 0.54$ not 54

5. A toy airplane costs \$4.84. It costs 4 times as much as a toy car. What is the cost of the toy car?

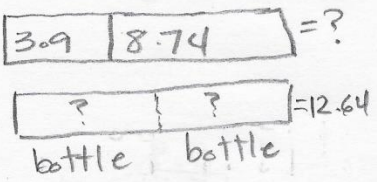


$$\begin{array}{r} 1.21 \\ 4\overline{)4.84} \\ \underline{4} \\ 08 \\ \underline{8} \\ 04 \\ \underline{4} \\ 0 \end{array}$$

A toy car costs \$1.21

6. Julian bought 3.9 liters of cranberry juice, and Jay bought 8.74 liters of apple juice. They mixed the two juices together, and then poured them equally into 2 bottles. How many liters of juice are in each bottle?

cranberry 3.9 liters
apple 8.74 liters



$$\begin{array}{r} {\scriptstyle 1} \\ 8.74 \\ +\ 3.9 \\ \hline 12.64 \end{array}$$

$$\begin{array}{r} 6.32 \\ 2\overline{)12.64} \\ \underline{12} \\ 06 \\ \underline{6} \\ 04 \\ \underline{4} \\ 0 \end{array}$$

There are 6.32 liters in each bottle

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Name _____ Date _____

1. Draw place value disks on the place value chart to solve. Show each step using the standard algorithm.

a. 4.236 ÷ 3 = 1.412

Ones	Tenths	Hundredths	Thousandths
4	2	3	6
0	0000	0	00
0	0000	0	00
0	0000	0	00

$$\begin{array}{r} \times 1.412 \\ \hline 3 \overline{)\,4.236} \\ 3 \\ \hline 12 \\ 12 \\ \hline 03 \\ 3 \\ \hline 06 \end{array}$$

b. 1.324 ÷ 2 = _____

Ones	Tenths	Hundredths	Thousandths
1	3	2	4
	0600	0000	00
	0000	0000	00

$$\begin{array}{r} 0.662 \\ \hline 2 \overline{)\,1.324} \\ 12 \\ \hline 12 \\ 12 \\ \hline 04 \\ 4 \\ \hline 0 \end{array}$$

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2. Solve using the standard algorithm.

a. $0.78 \div 3 =$ 0.26	b. $7.28 \div 4 =$ 1.82	c. $17.45 \div 5 =$ 3.49
0.26 3|0.78 6 18 18 0	1.82 4|7.28 4 32 32 08 8 0	3.49 5|17.45 15 24 20 45 45 0

3. Grayson wrote $1.47 \div 7 = 2.1$ in her math journal.
Use words, numbers, or pictures to explain why Grayson's thinking is incorrect.

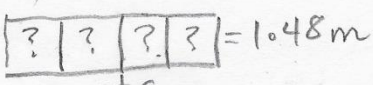
0.21
7\|1.47
14
07
07
0

Grayson misplaced the decimal point. 1.4 divided by 7 is 0.7 not 7. He could have checked by multiplying 7 x 2.1. This give 14.7 not 1.47

4. Mrs. Nguyen used 1.48 meters of netting to make 4 identical mini hockey goals. How much netting did she use per goal?

0.37
4\|1.48
12
28
28
0

1.48 ÷ 4 = 0.37

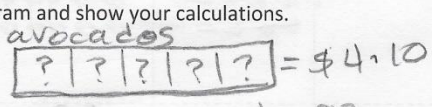


Mrs Nguyen used 0.37 m per net

5. Esperanza usually buys avocados for $0.94 apiece. During a sale, she gets 5 avocados for $4.10. How much money did she save per avocado? Use a tape diagram and show your calculations.

0.82
5\|4.10
40
10
10
0

0.94
− 0.82
0.12



1 avocado = $0.82

Esperanza saves $0.12 per avocado

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Name _____ Date _____

1. Draw place value disks on the place value chart to solve. Show each step using the standard algorithm.

a. 5.241 ÷ 3 = _____

Ones	Tenths	Hundredths	Thousandths
0			
0			
0			

$$\begin{array}{r} 1.747 \\ 3\overline{)5.241} \\ -3 \\ \hline 22 \\ -21 \\ \hline 14 \\ -12 \\ \hline 21 \\ -21 \\ \hline 0 \end{array}$$

b. 5.372 ÷ 4 = _____

Ones	Tenths	Hundredths	Thousandths
0			
0			

$$\begin{array}{r} 1.343 \\ 4\overline{)5.372} \\ -4 \\ \hline 13 \\ -12 \\ \hline 17 \\ -16 \\ \hline 12 \\ -12 \\ \hline 0 \end{array}$$

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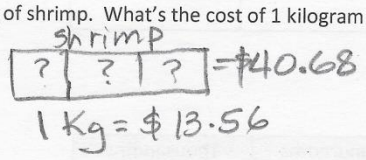
2. Solve using the standard algorithm.

a. $0.64 \div 4 =$ 0.16	b. $6.45 \div 5 =$ 1.29	c. $16.404 \div 6 =$ 2.734
0.16 4 | 0.64 4 24 24 0	1.29 5 | 6.45 5 14 10 45 45 0	2.734 6 | 16.404 12 44 42 20 18 24 24 0

3. Mrs. Mayuko paid $40.68 for 3 kg of shrimp. What's the cost of 1 kilogram of shrimp?

13.56
3 | 40.68
3
10
9
16
15
18
18
0



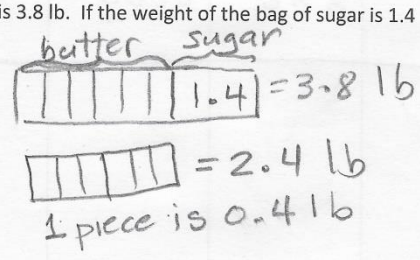
1 Kg = $13.56

A Kilogram of shrimp costs $13.56

4. The total weight of 6 pieces of butter and a bag of sugar is 3.8 lb. If the weight of the bag of sugar is 1.4 lb, what is the weight of each piece of butter?

3.8
− 1.4
2.4

0.4
6 | 2.4
24
0



One piece of butter weighs 0.4 lb

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Name _____ Date _____

1. Draw place value disks on the place value chart to solve. Show each step in the standard algorithm.

a. 0.5 ÷ 2 = 0.25

Ones	●	Tenths	Hundredths	Thousandths

0.25
2 | 0.5 0
−4
10
−10
0

b. 5.7 ÷ 4 = _____

Ones	●	Tenths	Hundredths	Thousandths

1.425
4 | 5.7 0 0
−4
17
16
10
−8
20
−20
0

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2. Solve using the standard algorithm.

a. 0.9 ÷ 2 = 0.45 2 ⟌ 0.9 8 10 −10 0	b. 9.1 ÷ 5= 1.82 5 ⟌ 9.1 −5 41 −40 10 −10 0	c. 9 ÷ 6 = 1.5 6 ⟌ 9 6 30 −30 0
d. 0.98 ÷ 4 = 0.245 4 ⟌ 0.98 8 18 −16 20 −20 0	e. 9.3 ÷ 6 = 1.55 6 ⟌ 9.3 −6 33 −30 30 −30 0	f. 91 ÷ 4 = 22.75 4 ⟌ 91 −8 11 −8 30 −28 20 −20 0

3. Six bakers shared 7.5 kilograms of flour equally. How much flour did they each receive?

1.25
6 ⟌ 7.5
−6
15
−12
30
−30

They received 1.25 Kilograms each.

4. Mrs. Henderson makes punch by mixing 10.9 liters of apple juice, 0.6 liters of orange juice, and 8 liters of ginger ale. She pours the mixture equally into 6 large punch bowls. How much punch is in each bowl? Express your answer in liters.

Apple juice 10.9 liters
Orange juice 0.6 liters
Ginger ale 8. liters

10.9
+ 8.0
0.6
19.5

3.25
6 ⟌ 19.5
−18
15
−12
30
−30
0

Each bowl has 3.25 liters

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Name _____ Date _____

1. Draw place value disks on the place value chart to solve. Show each step in the standard algorithm.

a. 0.7 ÷ 4 = 0.175

Ones	●	Tenths	Hundredths	Thousandths

$$\begin{array}{r} 0.175 \\ 4\overline{)0.70} \\ -4 \\ \hline 30 \\ -28 \\ \hline 20 \\ -20 \\ \hline 0 \end{array}$$

b. 8.1 ÷ 5 = 1.62

Ones	●	Tenths	Hundredths	Thousandths

$$\begin{array}{r} 1.62 \\ 5\overline{)8.1} \\ -5 \\ \hline 31 \\ -30 \\ \hline 10 \\ -10 \\ \hline 0 \end{array}$$

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2. Solve using the standard algorithm.

a. $0.7 \div 2 =$

$$\begin{array}{r} 0.35 \\ 2\overline{)0.7} \\ 6 \\ \hline 10 \\ 10 \\ \hline 0 \end{array}$$

b. $3.9 \div 6 =$

$$\begin{array}{r} 0.65 \\ 6\overline{)3.9} \\ 36 \\ \hline 30 \\ 30 \\ \hline 0 \end{array}$$

c. $9 \div 4 =$

$$\begin{array}{r} 2.25 \\ 4\overline{)9} \\ 8 \\ \hline 10 \\ 8 \\ \hline 20 \\ 20 \\ \hline 0 \end{array}$$

d. $0.92 \div 2 =$

$$\begin{array}{r} 0.46 \\ 2\overline{)0.92} \\ 8 \\ \hline 12 \\ 12 \\ \hline 0 \end{array}$$

e. $9.4 \div 4 =$

$$\begin{array}{r} 2.35 \\ 4\overline{)9.4} \\ 8 \\ \hline 14 \\ 12 \\ \hline 20 \\ 20 \\ \hline 0 \end{array}$$

f. $91 \div 8 =$

$$\begin{array}{r} 11.375 \\ 8\overline{)91} \\ 8 \\ \hline 11 \\ 8 \\ \hline 30 \\ 24 \\ \hline 60 \\ 56 \\ \hline 40 \\ 40 \\ \hline 0 \end{array}$$

3. A rope 8.7 meters long is cut into 5 equal pieces. How long is each piece?

$$\begin{array}{r} 1.74 \\ 5\overline{)8.7} \\ 5 \\ \hline 37 \\ 35 \\ \hline 20 \\ 20 \\ \hline 0 \end{array}$$

[?][?][?][?][?] = 8.7m

pieces

Each piece is 8.7m long

4. Yasmine bought 6 gallons of apple juice. After filling up 4 bottles of the same size with apple juice, she had 0.3 gallon of apple juice left. How many gallons of apple juice are in each container?

Apple juice 6 gallons
bottles 4
Juice left 0.3 gallon

$6.0 - 0.3 = 5.7$

[?][.][?] = 6

0.3

[?][?][.][?] = 5.7

$$\begin{array}{r} 1.425 \\ 4\overline{)5.7} \\ 4 \\ \hline 17 \\ 16 \\ \hline 10 \\ 8 \\ \hline 20 \\ 20 \\ \hline 0 \end{array}$$

There are 1.425 gallons of apple juice in each container

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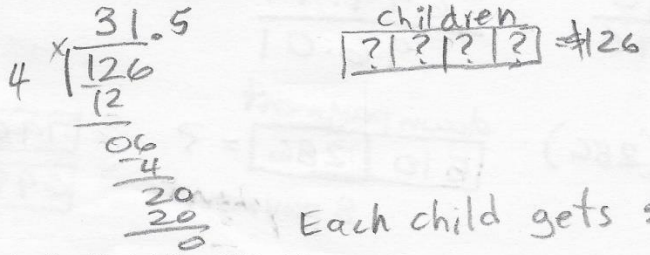
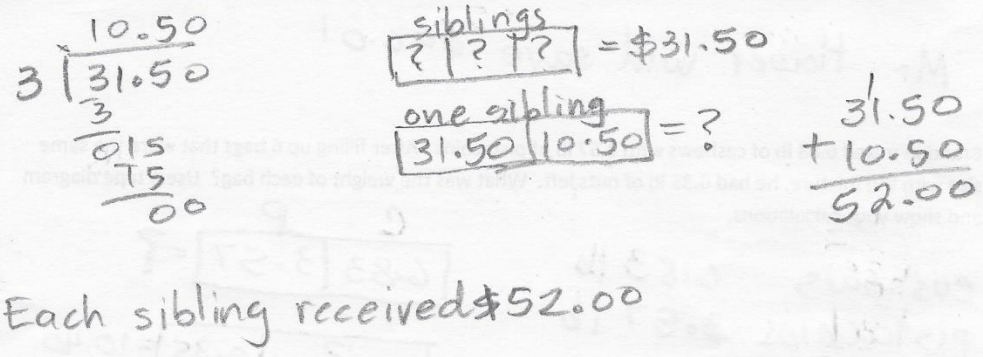
Name _____ Date _____

Solve.

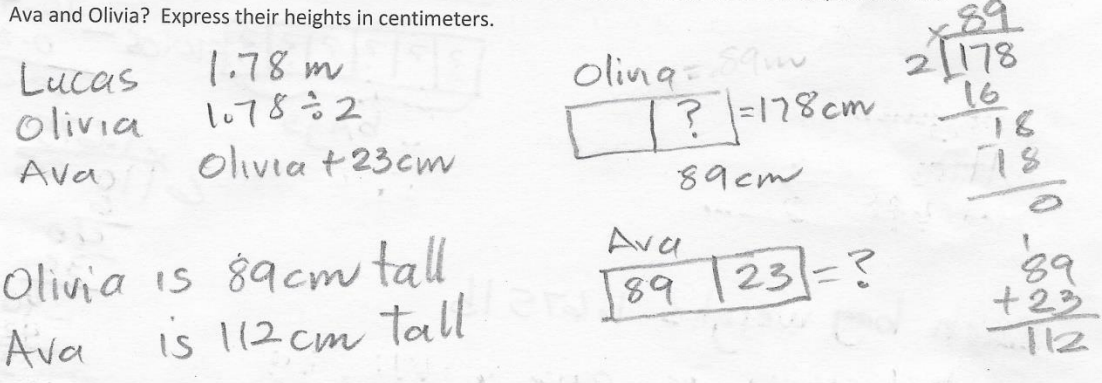
1. Mr. Frye distributed $126 equally among his 4 children for their weekly allowance.
   a. How much money did each child receive?



   b. John, the oldest child, paid his siblings to do his chores. If John pays his allowance equally to his brother and two sisters, how much money will each of his siblings have received in all?



2. Ava is 23 cm taller than Olivia, and Olivia is half the height of Lucas. If Lucas is 1.78 m tall, how tall are Ava and Olivia? Express their heights in centimeters.



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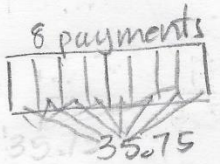
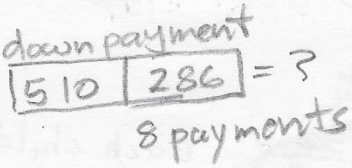
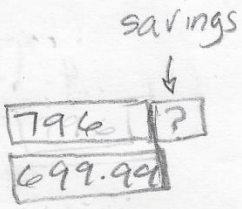
3. Mr. Hower can buy a computer with a down payment of $510 and 8 monthly payments of $35.75. If he pays cash for the computer, the cost is $699.99. How much money will he save if he pays cash for the computer instead of paying for it in monthly payments?

$$\begin{array}{r} {}^{4}{}^{6}{}^{4} \\ 35.75 \\ \times\ 8 \\ \hline 286.00 \end{array} \qquad \begin{array}{r} 510 \\ +\ 286 \\ \hline 796 \end{array} \qquad \begin{array}{r} 796.00 \\ -\ 699.99 \\ \hline 96.01 \end{array}$$



$= ?\ (286)$

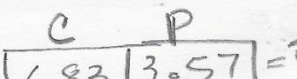




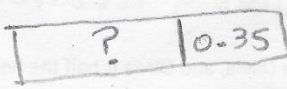
Mr. Hower will save $96.01

4. Brandon mixed 6.83 lb of cashews with 3.57 lb of pistachios. After filling up 6 bags that were the same size with the mixture, he had 0.35 lb of nuts left. What was the weight of each bag? Use a tape diagram and show your calculations.

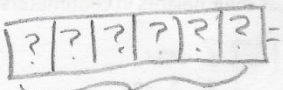
cashews 6.83 lb
pistachios 3.57 lb



$$\begin{array}{r} {}^{1}{}^{1} \\ 6.83 \\ +\ 3.57 \\ \hline 10.40 \end{array}$$



$$\begin{array}{r} 10.40 \\ -\ 0.35 \\ \hline 10.05 \end{array}$$



$$6 \overline{)\ 10.05} \quad 1.675$$

$$\begin{array}{r} 6 \\ \hline 40 \\ -\ 36 \\ \hline 45 \\ -\ 42 \\ \hline 30 \\ -\ 30 \\ \hline 0 \end{array}$$

Each bag weighs 1.675 lb

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5. The bakery bought 4 bags of flour containing 3.5 kg each. 0.475 kg of flour is needed to make a batch of muffins, and 0.65 kg is needed to make a loaf of bread.

   a. If 4 batches of muffins and 5 loaves of bread are baked, how much flour will be left? Give your answer in kilograms.

flour $4 \times 3.5 = 14$ kg

batches of muffins 4×0.475 kg $= 1.9$ kg

loaves of bread 5×0.65 kg $= 3.25$ kg

$3.25 + 1.9 = 5.15$

$14.00 - 5.15 = 8.85$

$3.5 \times 4 = 14.0$

$0.475 \times 4 = 1.900$

$0.65 \times 5 = 3.25$

There will be 8.85 kg of flour left

   b. The remaining flour is stored in bins that hold 3 kg each. How many bins will be needed to store the flour? Explain your answer.

$8.85 \div 3 = 2.95$

Each container holds 3 kilograms. Therefore 2 containers will be full and one will hold 0.95 kilograms.

3 bins will be needed

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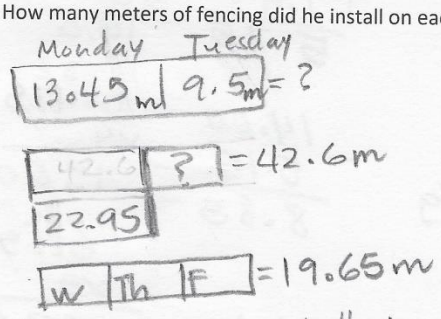
Name _____ Date _____

Solve using tape diagrams.

1. A gardener installed 42.6 meters of fencing in a week. He installed 13.45 meters on Monday and 9.5 meters on Tuesday. He installed the rest of the fence in equal lengths on Wednesday through Friday. How many meters of fencing did he install on each of the last three days?



$$\begin{array}{r} 6.55 \\ 3\overline{)19.65} \\ -18 \\ \hline 16 \\ -15 \\ \hline 15 \\ -15 \\ \hline 0 \end{array}$$

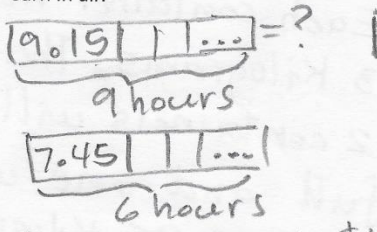
$$\begin{array}{r} {\scriptstyle 1}13.45 \\ 9.5 \\ \hline 22.95 \end{array}$$

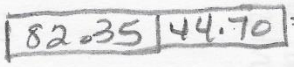
$$\begin{array}{r} 42.60 \\ -22.95 \\ \hline 19.65 \end{array}$$

The gardener installed 6.55m of fence each day.

2. Jenny charges $9.15 an hour to babysit toddlers and $7.45 an hour to babysit school-aged children.

   a. If Jenny babysat toddlers for 9 hours and school-aged children for 6 hours, how much money did she earn in all?





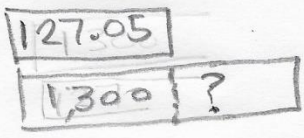
$$\begin{array}{r} {\scriptstyle 1}9.15 \\ \times 9 \\ \hline 82.35 \end{array}$$

$$\begin{array}{r} {\scriptstyle 2\ 3}7.45 \\ \times 6 \\ \hline 44.70 \end{array}$$

$$\begin{array}{r} {\scriptstyle 1\ \ 1}82.35 \\ +44.70 \\ \hline 127.05 \end{array}$$

Jenny earned $127.05 in all

   b. Jenny wants to earn $1,300 by the end of the summer. How much more will she need to earn to meet her goal?



$$\begin{array}{r} 1300.00 \\ -127.05 \\ \hline 1172.95 \end{array}$$

Jenny needs to earn $1172.95

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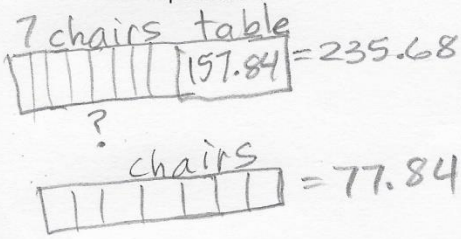
3. A table and 8 chairs weigh 235.68 lb together. If the table weighs 157.84 lb, what is the weight of one chair in pounds?

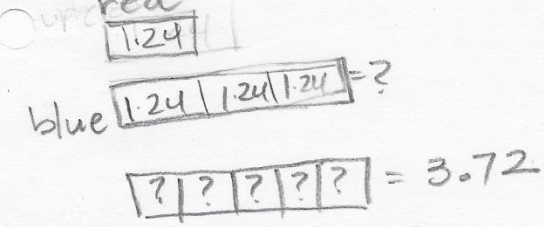


235.68
157.84
77.84

9.73
8 | 77.84
72
58
56
24
24
0

One chair weighs 9.73 lb

4. Mrs. Cleaver mixes 1.24 liters of red paint with 3 times as much blue paint to make purple paint. She pours the paint equally into 5 containers. How much blue paint is in each container? Give your answer in liters.



3.72
1.24
4.96

1
1.24
× 3
3.72

0.744
5 | 3.72
35
22
20
20
20
0

There are 0.744 liters of blue paint in each container

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