MATH: CONCEPTS

Lesson 1: Numeration

Directions: Read each problem. Fill in the circle for the correct answer.

Examples

A. Which two numbers are both factors of 63?

- (A) 6, 10
- (B) 6, 12
- (C) 7, 8
- (D) 7, 9

B. Which of these is between 2.07 and 2.75 in value?

- (F) 2.03
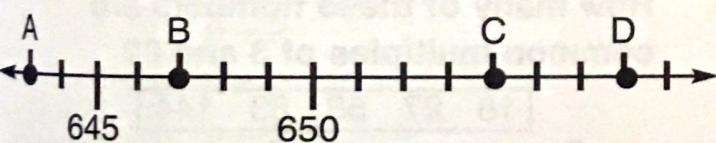- (G) 2.70
- (H) 27.0
- (J) 2.85

Clue Use scratch paper to work the problems. Drawing pictures can help you find the answers to many problems.

Practice

1. 25 =

- (A) 10^3
- (B) 12^2
- (C) 5^5
- (D) 5^2

2. Which point on this number line shows 654?

A   B   C   D
645   650

- (F) A
- (G) B
- (H) C
- (J) D

3. Which of these will have a remainder when it is divided by 8?

- (A) 40
- (B) 45
- (C) 24
- (D) 56

4. What number is expressed by

$(9 \times 1,000) + (4 \times 100) + (2 \times 10) + (3 \times 1)$?

- (F) 9,420
- (G) 9,400
- (H) 90,423
- (J) 9,423

5. Maria is fourteenth in line to buy a movie ticket. Exactly how many people are in front of her in line?

- (A) 13
- (B) 15
- (C) 14
- (D) 12

STOP

Name _____   Date _____

MATH: CONCEPTS

● **Lesson 2: Numeration**

Directions: Read each problem. Fill in the circle for the correct answer.

Examples

A. $\sqrt{36} =$

- Ⓐ 6
- Ⓑ 9
- Ⓒ 4
- Ⓓ 13

B. Which of these is the expanded numeral for 1,123?

- Ⓕ 1,000 + 12 + 3
- Ⓖ 11 + 23
- Ⓗ 10,000 + 1,000 + 23
- Ⓙ 1,000 + 100 + 20 + 3

Clue Read the problems carefully. If you misread a number, it could cause you to make a mistake.

● **Practice**

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1. Which of these numbers cannot be evenly divided into 28?
   - Ⓐ 1
   - Ⓑ 4
   - Ⓒ 6
   - Ⓓ 7

2. A librarian was putting books on shelves. There were 58 books and 6 shelves. The librarian wanted to put the same number of books on each shelf, but she had some extras. How many books did <u>not</u> fit on the 6 shelves?
   - Ⓕ 4
   - Ⓖ 6
   - Ⓗ 8
   - Ⓙ 9

3. What is the meaning of 640?
   - Ⓐ 6 tens and 4 ones
   - Ⓑ 6 tens and 0 ones
   - Ⓒ 4 hundreds and 6 ones
   - Ⓓ 6 hundreds and 4 tens

4. Which of these is <u>not</u> another way to write the number 4,860?
   - Ⓕ 400 + 800 + 6 + 0
   - Ⓖ four thousand, eight hundred, sixty
   - Ⓗ 4,000 + 800 + 60
   - Ⓙ

thousands	hundreds	tens	ones
4	8	6	0

5. How many of these numbers are common multiples of 3 and 9?

   | 18 27 58 63 144 |
   - Ⓐ 2
   - Ⓑ 3
   - Ⓒ 4
   - Ⓓ 5

6. What is the smallest number that can be divided evenly by 6 and 15?
   - Ⓕ 24
   - Ⓖ 30
   - Ⓗ 45
   - Ⓙ 60

STOP

MATH: CONCEPTS

Lesson 3: Number Concepts

Directions: Read each problem. Fill in the circle for the correct answer.

Examples

A. Which of these has a 4 in the hundreds place?

- (A) 4,523
- (B) 8,634
- (C) 3,844
- (D) 7,498

B. Which of these is an even number?

- (F) 34
- (G) 57
- (H) 21
- (J) 19

Clue Look for key words, numbers, and patterns to help you find the answers.

Practice

1. What is another name for the Roman numeral XII?

- (A) 5
- (B) 7
- (C) 12
- (D) 20

2. What is the rule shown by the number sequence in the box?

$$3, 5, 7, 9, 11$$

- (F) $n \div 2$
- (G) $n \times 2$
- (H) $n - 2$
- (J) $n + 2$

3. 795,643 =

- (A) seven hundred million, ninety-five thousand, six hundred forty-three
- (B) seven hundred ninety-five thousand, six hundred forty-three
- (C) seven hundred ninety-five million, six thousand forty-three
- (D) seven hundred ninety-five, six hundred forty-three

4. Which statement about place value is true?

- (F) 10 thousands are equal to 1,000,000
- (G) 10 hundreds are equal to 10,000
- (H) 10 tens are equal to 1,000
- (J) 10 tens are equal to 100

5. Which of these statements is true about the numbers in the box?

$$4, 9, 16, 25, 36$$

- (A) They are all even numbers.
- (B) They are all odd numbers.
- (C) They are all perfect squares.
- (D) They are all prime numbers.

STOP

MATH: CONCEPTS

● **Lesson 4: Number Concepts**

Directions: Read each problem. Fill in the circle for the correct answer.

Examples

A. Which of these numbers is both odd and a multiple of 5?

(A) 37
(B) 25
(C) 60
(D) 42

B. In which of these numerals does 7 have the least value?

(F) 7,302
(G) 4,675
(H) 1,257
(J) 2,796

Clue Look carefully at the position of the digits within each numeral. The position tells you what value the number has.

● **Practice**

1. These squares show groups of numbers that are related by the same rule. What number is missing from the third square?

| 128 | 32 |
| 16 | 4 |

| 192 | 48 |
| 24 | 6 |

| 96 | ? |
| 12 | 3 |

(A) 12
(B) 36
(C) 24
(D) 48

2. How much would the value of 42,369 be increased by replacing the 3 with a 5?

(F) 200
(G) 300
(H) 400
(J) 500

3. What does the 6 in 678,009 mean?

(A) 6,000
(B) 600
(C) 600,000
(D) 60,000

4. Suppose you have the digits 1, 5, and 9. Without repeating a digit, how many three-digit numbers could you make with 9 as the ones digit?

(F) 2
(G) 3
(H) 4
(J) 5

5. Which of these is 6,809,465?

(A) six billion, eight hundred million, nine thousand, four hundred sixty-five
(B) six million, eight hundred nine, four hundred sixty-five
(C) sixty-eight thousand, nine thousand, four hundred sixty-five
(D) six million, eight hundred nine thousand, four hundred sixty-five

6. Which is the numeral for four million, six hundred ninety-three thousand, three hundred twenty-one?

(F) 400,693,321
(G) 4,693,321
(H) 469,321
(J) 4,963,231

STO

MATH: CONCEPTS

Lesson 5: Properties

Directions: Read each problem. Fill in the circle for the correct answer.

Examples

A. What is 654,909 rounded to the nearest thousand?

- (A) 654,000
- (B) 650,000
- (C) 654,900
- (D) 655,000

B. What is another name for 4 x (2 + 3)?

- (F) 4 x (3 + 2)
- (G) (4 x 2) + 3
- (H) (2 + 3) ÷ 4
- (J) 4 x (2 x 3)

Clue Some problems can be solved through estimation. When estimating, it is especially important to look for key words and numbers to help you solve the problem.

Practice

1. There are 324 students in the fifth grade. Each student pledged to read 50 books during the year. Which number sentence shows how to find the number of books the fifth graders pledged to read?

   - (A) 324 ÷ 50 = □
   - (B) 324 x 50 = □
   - (C) 324 + 50 = □
   - (D) 324 − 50 = □

2. Which number sentence below is incorrect?

   - (F) 4 x 12 = 48
   - (G) 0 ÷ 12 = 12
   - (H) 4 + 12 = 16
   - (J) 48 − 12 = 36

3. What number makes all the number sentences below true?

3 x □ = 15
□ x 6 = 30
9 x □ = 45

   - (A) 3
   - (B) 6
   - (C) 4
   - (D) 5

4. The sum of 631 and 892 is closest to —

   - (F) 1,600
   - (G) 1,500
   - (H) 1,300
   - (J) 1,400

5. Another name for 20 x 10,000 is —

   - (A) 2 x 200,000
   - (B) 20,000 x 100
   - (C) 200 x 1,000
   - (D) 2,000 x 1,000

STOP

MATH: CONCEPTS

● Lesson 6: Properties

Directions: Read each problem. Fill in the circle for the correct answer.

Examples

A. What should replace the circle below to make the number sentence true?

$$18 + 5 \bigcirc 5 \times 5$$

- Ⓐ   >
- Ⓑ   <
- Ⓒ   =
- Ⓓ   ≥

B. Which statement is true about the answer to the equation in the box?

$$8{,}986 \div 100 = \square$$

- Ⓕ   is between 87 and 88
- Ⓖ   is between 88 and 89
- Ⓗ   is between 89 and 90
- Ⓙ   is between 90 and 91

Clue   Think about which operation is needed to solve an equation—addition, subtraction, multiplication, or division.

● Practice

1. Which of these is the best estimate of 66×98?
   - Ⓐ 60×90
   - Ⓑ 70×90
   - Ⓒ 60×100
   - Ⓓ 70×100

2. What symbol should replace the box in the number sentence below?

   $$64 \,\square\, 8 = 32 \div 4$$

   - Ⓕ   ×
   - Ⓖ   ÷
   - Ⓗ   −
   - Ⓙ   +

3. The amounts below show how much a student earned during a six-week time period.

$41.87	$36.23
$25.90	$42.36
$34.21	$27.83

   What operations are necessary to find out the student's average weekly earnings?
   - Ⓐ   subtraction and addition
   - Ⓑ   addition and multiplication
   - Ⓒ   addition and division
   - Ⓓ   multiplication and division

4. Which of the following number facts does not belong to the same family or group as the number sentence in the box?

   $$6 \times 8 = 48$$

   - Ⓕ $48 \div 6 = 8$
   - Ⓖ $8 \times 6 = 48$
   - Ⓗ $48 \div 8 = 6$
   - Ⓙ $48 \div 12 = 4$

STOP

MATH: CONCEPTS

Lesson 7: Place Value

Directions: Choose the best answer for each question.

Examples

A. What is 3.4256 rounded to the nearest hundredth?

- (A) 3.4
- (B) 3.426
- (C) 3
- (D) 3.43

B. How does the product of 7×10^4 relate to 7?

- (F) It has 4 zeros added to 7.
- (G) It has 3 zeros added to 7.
- (H) It has a decimal with 4 zeros before 7.
- (J) It has a decimal with 3 zeros before 7.

Practice

1. Which shows 2.54 in expanded form?

- (A) $2 \times 100 + 5 \times 10 + 4 \times 1$
- (B) $2 \times 1 + 5 \times (\frac{1}{100}) + 4 \times (\frac{1}{1000})$
- (C) $2 \times (\frac{1}{10}) + 5 \times (\frac{1}{100}) + 4 \times (\frac{1}{1000})$
- (D) $2 \times 1 + 5 \times (\frac{1}{10}) + 4 \times (\frac{1}{100})$

2. Which is true?

- (F) $0.972 = 0.927$
- (G) $0.386 < 0.391$
- (H) $0.587 > 0.589$
- (J) $0.17 > 0.176$

3. How does the quotient $6,000,000 \div 10^5$ relate to 6,000,000?

- (A) It has 4 fewer zeros at the end of the number.
- (B) It has 5 fewer zeros at the end of the number.
- (C) It has 4 more zeros at the end of the number.
- (D) It has 5 more zeros at the end of the number.

4. How does the product of 0.359×10^3 relate to 0.359?

- (F) It has the same digits, but the decimal moves 2 places right.
- (G) It has the same digits, but the decimal moves 3 places right.
- (H) It has the same digits, but the decimal moves 2 places left.
- (J) It has the same digits, but the decimal moves 3 places left.

5. What is 19.578 rounded to the nearest tenth?

- (A) 20
- (B) 19.6
- (C) 19.58
- (D) 19.57

6. What is 0.8996 rounded to the nearest thousandth?
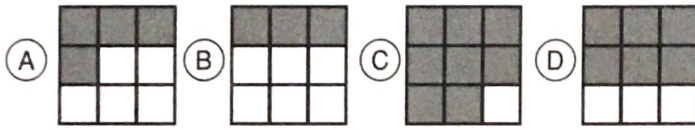
- (F) 0.9
- (G) 0.899
- (H) 0.89
- (J) 1

STOP

MATH: CONCEPTS

● Lesson 8: Fractions and Decimals

Directions: Read each problem. Fill in the circle for the correct answer.

Examples

A. Which figure below is $\frac{4}{9}$ shaded?

(A)   (B)   (C)   (D)

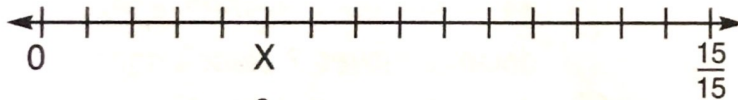**B.** Which group of decimals is ordered from least to greatest?

(F) 4.482, 4.483, 4.481, 4.408

(G) 4.576, 4.432, 4.678, 4.104

(H) 4.978, 4.652, 4.331, 4.320

(J) 4.269, 4.692, 4.699, 4.732

Clue If you work on scratch paper, be sure that you transfer your answer correctly. Fill in the right answer space.

● Practice
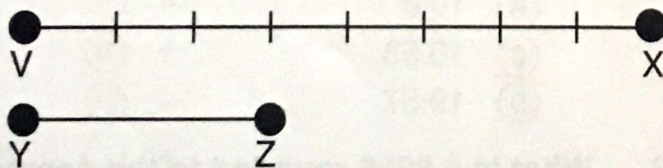
1. Which fraction is shown by the X on this number line?

```
0        X                    15
                              15
```

(A) $\frac{3}{5}$

(B) $\frac{1}{3}$

(C) $\frac{7}{15}$

(D) $\frac{5}{10}$

2. The length of YZ is what fraction of the length of VX?

V _____ X

Y _____ Z

(F) $\frac{7}{12}$

(G) $\frac{5}{10}$

(H) $\frac{4}{8}$

(J) $\frac{3}{8}$

3. Which of these is another way to write $\frac{3}{10}$?

(A) 0.03

(B) 0.3

(C) 3.0

(D) 0.003

4. How do you write thirty-eight hundredths as a decimal?

(F) 03.8

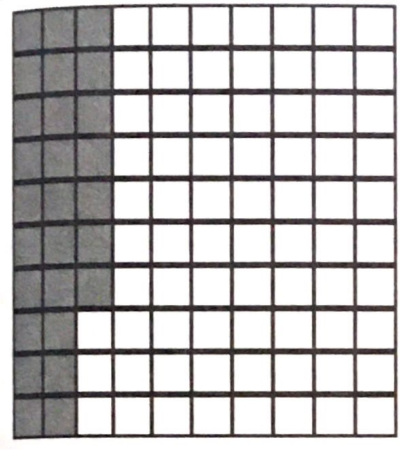(G) 0.038

(H) 0.38

(J) 3.8

STOP

MATH: CONCEPTS

Lesson 9: Fractions and Decimals

Directions: Read each problem. Fill in the circle for the correct answer.

Example

A. Which decimal shows how much of the shape on the left is shaded?

- Ⓐ 0.23
- Ⓑ 0.27
- Ⓒ 0.49
- Ⓓ 0.72

Clue Remember that with fractions, the smaller the denominator, the larger the value. The denominator is the numeral on the bottom of the fraction.
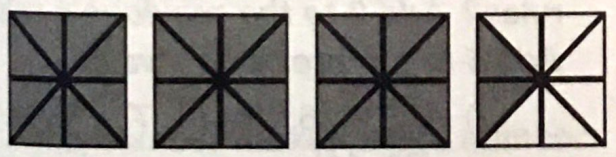
Practice

1. $\frac{3}{\square} = \frac{9}{21}$

$\square = ?$

- Ⓐ 8
- Ⓑ 4
- Ⓒ 6
- Ⓓ 7

2. Which number tells how much of this group of shapes is shaded?

- Ⓕ $\frac{3}{4}$
- Ⓖ $3\frac{1}{2}$
- Ⓗ $3\frac{1}{4}$
- Ⓙ $3\frac{3}{4}$

3. Which of these is another way to write 0.25?

- Ⓐ $\frac{1}{4}$
- Ⓑ $\frac{25}{50}$
- Ⓒ $\frac{4}{25}$
- Ⓓ $\frac{3}{8}$

4. Which of these has a value greater than $\frac{3}{4}$?

- Ⓕ 0.25
- Ⓖ 0.68
- Ⓗ 0.86
- Ⓙ 0.75

5. What is the least common denominator of $\frac{1}{2}$, $\frac{1}{4}$, and $\frac{1}{5}$?

- Ⓐ 15
- Ⓑ 20
- Ⓒ 30
- Ⓓ 40

STOP