

An *integer* is a number that does not contain a decimal or a fraction.

1) How many integers are within the darkened line above?

2) How many positive integers are within the darkened line above?

7. If $\frac{p}{4}$ is an integer, which of the following

CANNOT be the value of p ?

- (A) 12
- (B) 16
- (C) 18
- (D) 20
- (E) 24

A *negative* number is a number less than zero.

A *positive* number is a number greater than zero.

Zero is neither positive nor negative.

4. If $a + b$ is a negative number, and $a = 5$, which of the following could be the value of b ?

- (A) -2
- (B) -3
- (C) -4
- (D) -5
- (E) -6

$$Q = \{2, 2, 3, 3, 4, 4, 6\}$$

Distinct means different.

14. Which of the following is the sum of three distinct even numbers in Set Q?

- (A) 7
- (B) 10
- (C) 12
- (D) 13
- (E) 14

An *even* number is any integer divisible by 2.

An *odd* number is any integer not divisible by 2.

Zero is even.

3. If n is the difference between two positive integers, and $n = 4$, then the two positive integers could be

(A) 4 and 6
(B) 5 and 6
(C) 3 and 3
(D) 1 and 4
(E) 2 and 6

15. Which of the following is the product of two consecutive odd integers?

(A) 12
(B) 13
(C) 14
(D) 15
(E) 16

4. $4 + (7 - 5)^2 \times 3 =$

(A) 10
(B) 14
(C) 16
(D) 24
(E) 76

6. If r is the remainder when 45 is divided by 6, what is the remainder when 17 is divided by r ?

(A) 1
(B) 2
(C) 3
(D) 4
(E) 5

A *difference* is the result of subtracting.

A *sum* is the result of adding.

A *product* is the result of multiplying.

A *quotient* is the result of dividing.

Consecutive means "in order," usually from smallest to largest.

The *order of operations* is:

Parentheses

Exponents

Multiplication & **D**ivision

Addition & **S**ubtraction

A *remainder* is what is left over after dividing.

A *prime number* is a number divisible only by itself and 1.

1 is not prime.

2 is the smallest prime number, and is the only even prime.

A *factor* of a number divides evenly into that number. Another word for factor is *divisor*.

A *multiple* of a number is *divisible* by that number.

RULES OF ZERO:

- Even
- Integer
- Not positive or negative
- Any number times zero is zero.
- Zero divided by any number is zero – but you can't divide by zero.

8. What is the sum of the distinct prime factors of 60?

- (A) 9
- (B) 10
- (C) 11
- (D) 12
- (E) 30

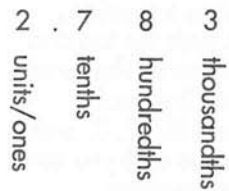
7. Which of the following is the first positive integer multiple of 16?

- (A) 0
- (B) 2
- (C) 8
- (D) 16
- (E) 32

3. If the product of m , n , o , and p is 0, and the product of n , o , p , and q is greater than 0, which of the following must be true?

- (A) $m = 0$
- (B) $n = 0$
- (C) $o = 0$
- (D) $p = 0$
- (E) $q = 0$

DECIMALS AND FRACTIONS



5. $0.461 =$

- (A) $\frac{6}{1000} + \frac{4}{100} + \frac{1}{10}$
- (B) $\frac{4}{1000} + \frac{6}{100} + \frac{1}{10}$
- (C) $\frac{1}{1000} + \frac{4}{100} + \frac{6}{10}$
- (D) $\frac{4}{1000} + \frac{1}{100} + \frac{6}{10}$
- (E) $\frac{1}{1000} + \frac{6}{100} + \frac{4}{10}$

8. Of the following numbers, which is the greatest?

- (A) 0.1002
- (B) 0.099
- (C) 0.08
- (D) 0.103
- (E) 0.11

3. Which of the following is greater than $\frac{2}{5}$ but less than $\frac{3}{5}$?

- (A) .20
- (B) .25
- (C) .30
- (D) .35
- (E) .45

Solve the following:

$$\frac{3}{8} + \frac{7}{12} = \underline{\hspace{2cm}}$$

$$\frac{2}{3} - \frac{15}{16} = \underline{\hspace{2cm}}$$

$$\frac{3}{8} \times 56 = \underline{\hspace{2cm}}$$

$$\frac{2}{3} \times \frac{9}{17} = \underline{\hspace{2cm}}$$

$$\frac{1}{16} \div \frac{3}{4} = \underline{\hspace{2cm}}$$

$$\frac{18}{15} \div \frac{3}{5} = \underline{\hspace{2cm}}$$

The fraction bar means "divided by."

Many calculators have fraction features that allow you to type problems like these right in. If yours doesn't, simply convert the fractions to decimals.

To reduce a fraction, divide both the top and the bottom by the same number. Try small numbers like 2, 3, and 5. Reduce until you can't reduce anymore.

3. Which of the following expresses $\frac{78}{48}$ in its most reduced form?

- (A) $\frac{3}{24}$
(B) $\frac{13}{8}$
(C) $\frac{5}{20}$
(D) $\frac{6}{18}$
(E) $\frac{26}{52}$

$$\frac{s}{60} \quad \frac{s}{77} \quad \frac{s}{80}$$

6. Each of the fractions above must be in its simplest reduced form. Which of the following could be a value of s ?

- (A) 7
(B) 9
(C) 11
(D) 13
(E) 15

5. Which of the following expressions is the greatest?

- (A) $2 + \frac{1}{5}$
(B) $2 + \frac{1}{5}$
(C) $2 \times \frac{1}{5}$
(D) $2 - \frac{1}{5}$
(E) $\frac{1}{5} - 2$

Ballpark!