

## Practice Test-Algebra Readiness

- a) 2.61025 b) 2.21165 c) 2.39102 d) 2.39165

### Topic I — Operations with Integers

- A car traveling 60 mph moves how many feet in one second?  
a) 60 ft/sec b) 200 ft/sec c) 40 ft/sec d) 88 ft/sec
- 400 grams of fertilizer are used for each of 500 trees in an orchard. How many kilograms of fertilizer are needed for the orchard?  
a) 20 kg b) 20,000 kg c) 200 kg d) 2000 kg
- A certain baseball team wins on the average 6 out of every 8 games it plays. If the team is to play 72 games, what is the most probable number of wins?  
a) 12 b) 54 c) 36 d) 48
- If a light on a buoy makes one revolution every 10 seconds, how many revolutions does the light make in one hour?  
a) 360 b) 36 c) 60 d) 600
- It takes 18 minutes for a certain bacteria population to triple. At 8:30 a.m., the bacteria count was 4,010,000. What is the best estimate (in millions of units) of the population at 9:06 a.m. on the same morning?  
a) 120,000,000 b) 36 c) 120,000 d) 12
- A drive belt for a motor is moving at the rate of 2 meters/second. What is the speed in kilometers per hour?  
a) 7200 km/hr b) 3600 km/hr c) 7.2 km/hr d) 3.6 km/hr

### Topic II — Operations with Fractions and Decimals

1.  $2.41095 - 0.1993 = ?$

2.  $(2\frac{1}{4})(3\frac{1}{3}) = ?$

- a)  $\frac{15}{2}$  b)  $\frac{30}{12}$  c) 6 d)  $\frac{27}{40}$

3.  $5.2 \div 0.0315 = ?$

- a) 165.07936 b) 165.07 c) 0.00165 d) 0.1638

4.  $3\frac{5}{8} - 1\frac{11}{16} = ?$

- a)  $1\frac{5}{16}$  b)  $1\frac{15}{16}$  c) 2 d)  $2\frac{1}{16}$

5.  $\frac{2}{3} \cdot \frac{15}{16} = ?$

- a)  $\frac{17}{18}$  b)  $\frac{32}{45}$  c)  $1\frac{3}{5}$  d)  $\frac{5}{8}$

6. Divide  $8\frac{1}{2}$  by  $2\frac{5}{6}$ .

- a) 3 b)  $\frac{1}{3}$  c)  $24\frac{1}{12}$  d)  $\frac{12}{289}$

7. Simplify:  $(\frac{3}{4} + \frac{1}{2}) \div \frac{15}{16}$

- a)  $1\frac{1}{3}$  b)  $\frac{32}{45}$  c)  $\frac{7}{3}$  d)  $1\frac{11}{64}$

8. A patient has been placed in a reducing diet designed to lose 18 pounds in 3 months. The patient loses  $6\frac{3}{4}$  pounds the first month, and  $5\frac{1}{2}$  pounds the second month. How much weight must the patient lose during the third month to achieve this goal?

- a)  $11\frac{1}{4}$  b)  $6\frac{1}{4}$  c)  $5\frac{3}{4}$  d)  $12\frac{1}{4}$

- a) 45 b) -45 c) 9 d) -9

### Topic III. — Operations with Percentages

1. What is 86% of 8000?  
a) 68 b) 6880 c) 80000 d) 1200
2. What is one half of one percent of 7500?  
a) 375 b) 11250 c) 37.5 d) 112.5
3. 15 is what percent of 5?  
a) 3% b) 300% c)  $33\frac{1}{3}\%$  d)  $3\frac{1}{3}\%$
4. Mary's salary was increased by 10%. She now earns \$1650. What did she earn before the increase?  
a) \$1500 b) \$1485 c) \$1815 d) \$1525
5. If 80% of a number is 2000, what is the number?  
a) 2500 b) 2800 c) 3600 d) 1200
6. A sporting goods store has a tennis racket on sale for \$60. This is 80% of its original price. What was the original price?  
a) \$108 b) \$68 c) \$72 d) \$75
7. An automobile tire costs \$44.50 plus a sales tax of  $6\frac{1}{2}\%$ . What price must be paid by the customer?  
a) \$41.61 b) \$47.17 c) \$51.35 d) \$47.39
8. A camera lists for \$139.99 and is given a 15% discount. What is the cost to the customer if a  $6\frac{1}{2}\%$  sales tax is added?  
a) \$118.99 b) \$151.89 c) \$126.73 d) \$132.99

### Topic IV. — Operations with Signed Numbers

1. What number divided by -5 gives 9 as an answer?

2.  $4 - 7 - 2 + 1 = ?$   
a) 6 b) 3 c) -4 d) 2
3. What is the distance on the number line from -10 to 7?  
a) 10 b) 7 c) 17 d) -3
4.  $0.0058 - 0.0329 = ?$   
a) 0.0387 b) -0.0271 c) 0.0271 d) -0.00271
5. The temperature rose from a low of  $-12^{\circ}\text{F}$  to a high of  $23^{\circ}\text{F}$  at noon. What was the increase in temperature?  
a)  $23^{\circ}\text{F}$  b)  $13^{\circ}\text{F}$  c)  $40^{\circ}\text{F}$  d)  $35^{\circ}\text{F}$
6.  $4(-2) = ?$   
a) -8 b) 8 c) 4 d) -2
7.  $(0)(5) = ?$   
a) 0 b) 5 c) not defined d)  $\frac{0}{5} + 1$
8.  $-\frac{6}{2} = ?$   
a) -2 b) 3 c) 2 d) -3

### Topic V. — Operations involving exponents, square roots, and simple equations

1. The quotient of n divided by 5 is 13. Which of the following equations represents this statement?  
a)  $13n = 5$  b)  $5n = 13$  c)  $\frac{13}{n} = 5$  d)  $\frac{n}{5} = 13$

2. If  $5x + 2y = 18$  and if  $x = 2$  then  $y = ?$

- a) 18   b) 10   c) 4   d) 2

3. The prime factorization of 28 is ?

- a)  $4 \times 7$    b)  $2 \times 2 \times 7$    c) 7   d)  $2 \times 2$

4.  $(2^4)(2^5) = ?$

- a)  $2^{20}$    b)  $4^7$    c)  $2^9$    d)  $4^{20}$

5. Find the least common multiple of 9 and 15.

- a) 3   b) 9   c) 135   d) 45

6. If  $x = 3$ , then  $\frac{6}{x} + 2 = ?$

- a) 4   b) 8   c) 2   d) 5

7.  $\frac{4xy}{6yz} = ?$

- a)  $\frac{4y}{z}$    b)  $\frac{x}{6z}$    c)  $\frac{2xy}{3z}$    d)  $\frac{2x}{3z}$

8. If  $\sqrt{x} = 16$ , then  $x = ?$

- a) 4   b) 16   c) 64   d) 256

### Topic VI. — Geometric Applications

1. The length and width of a rectangle are 6 ft and 4 ft respectively. What is the perimeter of the rectangle?

- a) 24 ft   b) 20 ft   c) 10 ft   d) 40 ft

2. A circle has a radius of 8 inches. What is the area of the circle?

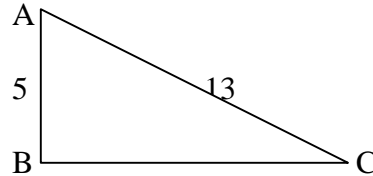
- a)  $8\pi \text{ in}^2$    b)  $16\pi \text{ in}^2$    c)  $64\pi \text{ in}^2$    d)  $64 \text{ in}^2$

3. Find the volume of a rectangular box that is 6.4 m

long, 5 m wide, and 2 m high.

- a)  $64 \text{ m}^3$    b)  $13.4 \text{ m}^3$    c)  $22.8 \text{ m}^3$    d)  $44.8 \text{ m}^3$

4. In triangle ABC shown below, find the length of side BC.

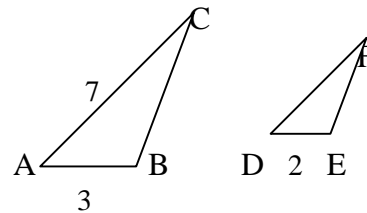


- a) 5   b) 13   c) 12   d) 18

5. How much carpet is needed to cover the floor of a room that has dimensions of 12 ft by 24 ft?

- a)  $288 \text{ yd}^2$    b)  $32 \text{ yd}^2$    c)  $80 \text{ yd}^2$    d)  $144 \text{ yd}^2$

6. The two triangles ABC and DEF are similar, what is the length of side DF ?



- a)  $4\frac{1}{3}$    b)  $11\frac{1}{2}$    c)  $2\frac{1}{2}$    d)  $\frac{14}{3}$

### Solutions to Practice Test:

#### Topic I.

1. d   2. c   3. b   4. a   5. b   6. c

#### Topic II.

1. b   2. a   3. a   4. b   5. d   6. a   7. a  
8. c

#### Topic III.

1. b   2. c   3. b   4. a   5. a   6. d   7. d  
8. c

#### Topic IV.

1. b   2. c   3. c   4. b   5. d   6. a   7. a  
8. d

**Topic V.**

1. d   2. c   3. b   4. c   5. d   6. a   7. d  
8. d

**Topic VI. :** 1. b   2. c   3. a   4. c   5. b   6. d