

# Arithmetic/Algebra Readiness Sample Test

## Topic I — Numerical Operations

- Simplify:  $3 \cdot 5 + 4 \cdot 5$   
a) 95      b) 135      c) 35      d) 17
- $(3 \times 10^5)(2 \times 10^1)$   
a)  $6 \times 100^6$     b)  $6 \times 10^5$     c)  $6 \times 10^6$     d)  $5 \times 20^6$
- 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
- Sarah has \$290 in her account. She writes checks for \$101 and \$78 and then makes a deposit of \$180. Find the amount left in her account.  
a) \$291      b) \$289      c) \$191      d) \$189
- $2.41095 - 0.1993 = ?$   
a) 2.6102      b) 2.21165    c) 2.39102    d) 2.39165
- $(2\frac{1}{4})(3\frac{1}{3}) = ?$   
a)  $\frac{15}{2}$       b)  $\frac{30}{12}$       c) 6      d)  $\frac{27}{40}$
- $5.2 \div .004 = ?$   
a) 1.3      b) 13.0      c) 130      d) 1300
- $3\frac{5}{8} - 1\frac{11}{16} = ?$   
a)  $1\frac{5}{16}$       b)  $1\frac{15}{16}$       c) 2      d)  $2\frac{1}{16}$
- $\frac{2}{3} \cdot \frac{15}{16} = ?$   
a)  $\frac{17}{18}$       b)  $\frac{32}{45}$       c)  $1\frac{3}{5}$       d)  $\frac{5}{8}$
- Martin ran the 50 meter race on four occasions. His times were:  

9.60 sec	9.00 sec	10.30 sec	9.30 sec
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Find Martin's average time.  
a) 9.30 sec    b) 9.55 sec    c) 9.60 sec    d) 9.35 sec

## Topic II — Operations with Percentages

- What is 86% of 8000?  
a) 68      b) 6880      c) 80000      d) 1200
- 15 is what percent of 5?  
a) 3%      b) 300%      c)  $33\frac{1}{3}\%$       d)  $3\frac{1}{3}\%$
- 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
- 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) \$7      d) \$75
- An automobile tire costs \$44.50 plus a sales tax of 8%. What is the total cost the customer will pay for the tire?  
a) \$47.46    b) \$48.46    c) \$52.50    d) \$48.06
- In December a sweater sold for \$50. In January, it was on sale for \$40. What was the percentage decrease?  
a) 10%      b) 20%      c) 25%      d) 40%

## Topic III — Operations with Signed Numbers

- What number divided by -5 gives 9 as an answer?  
a) 45      b) -45      c) 9      d) -9
- $4 - 7 - 2 + 1 = ?$   
a) 6      b) 3      c) -4      d) 2
- Put these fractions in order from largest to smallest:  
 $\frac{1}{2}, .3, \frac{7}{10}, \frac{4}{5}$   
 a)  $\frac{7}{10}, \frac{4}{5}, .3, \frac{1}{2}$       b)  $\frac{4}{5}, \frac{7}{10}, .3, \frac{1}{2}$   
 c)  $.3, \frac{1}{2}, \frac{7}{10}, \frac{4}{5}$       d)  $\frac{4}{5}, \frac{7}{10}, \frac{1}{2}, .3$
- What is the distance on the number line from -10 to 7?  
a) 10      b) 7      c) 17      d) -3
- 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)  $11^\circ\text{F}$     d)  $35^\circ\text{F}$
- $2 - (4 - 5) = ?$   
a) 3      b) -7      c) 1      d) 2
- $(0)(5) = ?$   
a) 0      b) 5      c) not defined    d)  $\frac{0}{5} + 1$

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26.  $(-2)(-3) + 4(5 - 7) = ?$   
 a) -18      b) -3      c) -20      d) -2

**Topic IV — Simplifying Expressions and Solving Equations**

27. The prime factorization of 28 is ?  
 a)  $4 \times 7$       b)  $2 \times 2 \times 7$       c) 7      d)  $2 \times 2$

28.  $(2^4)(2^5) = ?$   
 a)  $2^{20}$       b)  $4^9$       c)  $2^9$       d)  $4^{20}$

29. Find the least common multiple of 9 and 15.  
 a) 3      b) 9      c) 135      d) 45

30.  $(.3)^2 + (.03)^2 = ?$   
 a) .099      b) .9900      c) .0909      d) .9090

31. Simplify:  $5(2 - x)$   
 a)  $10x$       b)  $10 - x$       c)  $10 - 5x$       d)  $-10x$

32. If  $5x + 2y = 18$  and if  $x = 2$ , then  $y = ?$   
 a) 18      b) 10      c) 4      d) 2

33. If  $x = 3$ , then  $\frac{6}{x} + 2 = ?$   
 a) 4      b) 8      c) 2      d) 5

34. Simplify:  $\frac{4xy}{6yz}$   
 a)  $\frac{4y}{z}$       b)  $\frac{x}{6z}$       c)  $\frac{2xy}{3z}$       d)  $\frac{2x}{3z}$

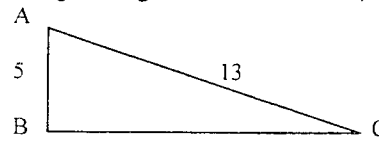
35. If  $\sqrt{x} = 16$ , then  $x = ?$   
 a) 4      b) 16      c) 64      d) 256

**Topic V — Geometric Applications**

36. A rectangle has a perimeter of 32 inches and a width of 4 inches. Find the length of the rectangle.  
 a) 8 in      b) 12 in      c) 16 in      d) 24 in

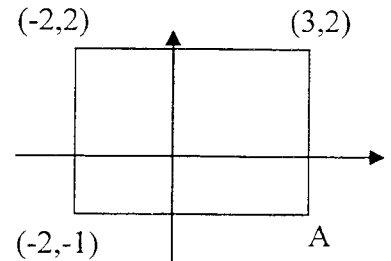
37. A circle has a radius of 8 inches. What is the area of the circle?  
 a)  $8\pi \text{ in}^2$       b)  $16\pi \text{ in}^2$       c)  $64\pi \text{ in}^2$       d)  $64 \text{ in}^2$

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



- a) 5      b) 13      c) 12      d) 18  
 39. How much carpet is needed to cover the floor of a room that has dimensions of 12 yd by 24 yd?  
 a) 288 sq yd      b) 32 sq yd      c) 80 sq yd      d) 144 sq yd

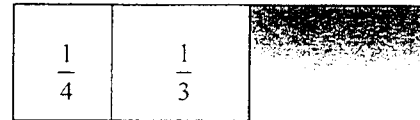
40. A rectangle is drawn on a plane. What are the coordinates of point A.



- a) (3,1)      b) (-1,3)  
 c) (3,-2)      d) (3,-1)

41. What fractional part of the rectangular rod is shaded?

- a)  $\frac{5}{7}$       b)  $\frac{5}{12}$   
 c)  $\frac{5}{6}$       d)  $\frac{7}{12}$



Solutions to Practice Test:

1. c    2. c    3. b    4. a    5. b    6. a  
 7. b    8. a    9. d    10. b    11. d    12. b  
 13. b    14. b    15. a    16. d    17. d    18. b  
 19. b    20. c    21. d    22. c    23. d    24. a  
 25. a    26. d    27. b    28. c    29. a    30. c  
 31. c    32. c    33. a    34. d    35. d    36. b  
 37. c    8. c    39. a    40. d    41. b