

UNIT TEST    **Lessons 11-19**



Solve for the unknown by completing the square.

1.  $x^2 + 6x - 6 = 0$

2.  $x^2 + 4x + 1 = 0$

Solve for the unknown by using the quadratic formula.

3.  $x^2 + 8x - 5 = 0$

4.  $2x^2 + 3x + 6 = 0$

Find the discriminant and describe the roots of each equation. Choose from the following terms: real, imaginary, rational, irrational, equal, and unequal.

5.  $x^2 + 3x = 10$

6.  $x^2 + 12x + 36 = 0$

7.  $4x^2 - 8x = -20$

8.  $x^2 - 5x + 3 = 0$

Solve as directed. None of the unknowns equal zero.

9. Solve for W:  $WXY = Z$

10. Solve for A:  $\frac{TR}{A} = \frac{X}{B}$

11. Solve for X:  $\frac{X}{Y} - A = 0$

12. Solve for Y:  $\frac{1}{Y} = \frac{1}{T}$

Answer the questions.

13. A set of living room furniture is being discounted 20%. If the original price was \$2,345, what is the new price?

14. If the tax rate is 6%, what is the total amount that must be paid for the furniture in #13?

15. The atomic weight of carbon (C) is 12 and that of oxygen (O) is 16. What is the percentage of carbon in  $\text{CO}_2$ ?
  
16. The ratio of blue to green is six to eight. If 36 are blue, how many are green?
  
17. Jim threw the basketball 56 times. His ratio of baskets to misses was five to nine. How many baskets did he make?
  
18. Express 400 ounces as pounds.
  
19. There are .62 miles in one kilometer. How many miles are there in eight kilometers?
  
20. Greg traveled at 50 mph for six hours. How far did he travel?
  
21. How long will it take Cody to travel 280 miles if he travels at 20 mph?
  
22. Traveling at a rate of 60 mph, Angie took one hour to get to the city this morning. Coming home by the same route, she was able to travel at only one-third of her morning rate because of traffic. How far is it to the city?  
How long did it take Angie to drive home?

23. Lewis left camp at 5:00 a.m. and reached the lake at 10:00 a.m. Clark left camp one hour later and reached the lake at the same time. Clark paddled his canoe two miles an hour faster than Lewis. How fast did each paddle?
24. Joseph and Devan were 230 miles apart. Joseph started toward their meeting place at 1:00 p.m. traveling at 35 mph. Devan left at 3:00 p.m. and traveled 10 mph faster than Joseph. When did they meet?
25. How far did each person in #24 travel?