

Solve and then select the correct choice below, fill in the answer box if necessary.

1. $4(3x + 9) = 21x + 20 - 9x + 16$

☐ A. $x =$

☐ B. The equation has infinitely many solutions.☐ C. The equation has no solution.

2. $4(x + 2) = 36$

☐ A. $x =$

☐ B. The equation has infinitely many solutions.☐ C. The equation has no solution.

3. $7x + 9x - 7 = 4(4x + 2)$

☐ A. $x =$

☐ B. The equation has infinitely many solutions.☐ C. The equation has no solution.

4. $200x + 100 = 200x + 100$

☐ A. $x =$

☐ B. The equation has infinitely many solutions.☐ C. The equation has no solution.

5. Find the value of x when the expression $6x + 9$ equals $3x + 12$.

6. Apply the distributive property to re-write $9(2 - x) = 27$. Then **solve** the equation. $x =$ _____

☐ A. $2(9) + 2x = 27$

☐ B. $9(2) - 9x = 27$

☐ C. $9(2) + 9x = 27$

☐ D. $2(9) - 2x = 27$

7. Solve $\frac{m}{12} - 6 = \frac{23}{12}$.

8. Solve $\frac{b}{5} - 7 = 3\frac{1}{4}$.

9. A rental company rents a luxury car at a daily rate of \$39.19 plus \$0.40 per mile. Jerry is allotted \$100 for car rental each day. Write an equation to represent the cost C of renting a car and driving x miles. How many miles can Vanessa travel on \$100?

10. Park City accumulated 5 inches of snow, and the snow depth is increasing by 5 inches every hour. Taylorsville has accumulated 10 inches, and the depth is increasing by 4 inches every hour. In about how many hours will the snowfall of the towns be equal? Round your answer to the nearest tenth if necessary.

11. A medical professional bought 8.2 ft² of bandages. He used 2.1 ft² so far and has \$97.62 worth of bandages remaining. The equation $8.2x - 2.1x = 97.62$ represents how much bandage is remaining and the cost of the remaining amount. How much does bandage cost per square foot?

Solve the following equations.

12. $\frac{y}{3} + 5 = -17.$

16. $8x + 12x = 120.$

13. $\frac{x}{5} - 6 = \frac{9}{10}.$

17. $-2x + 10 + 3x = 4 + 2x + 6.$

14. $9x - 5x - 13 = 51.84.$

18. $5x + 6x - 54 = 90 - 7x.$

15. $7 + \frac{1}{7}x = 9$

19. $\frac{8}{3}x + \frac{1}{3}x = 3\frac{1}{3} + \frac{7}{3}x.$

20. Find the value of x when the expression $5x + 3$ equals $2x + 15$.

21. Find the value of x when $6 - 2x = 5x - 9x + 14$.

22. Sandy's population is 89,200 and is decreasing at a rate of 178 people per year. Draper's population is 43,019 and is growing at a rate of 65 people per year. In how many years will the two towns have the same population?

23. Use the Distributive property to solve the equation. $2(x + 2) = 10$

24. Use the Distributive property to solve the equation. $6(x - 6) + 6 = 8x - 12$

25. Use the Distributive property to solve the equation. $34 - (2c + 4) = 2(c + 5) + c$

Solve the following equations.

26. $\frac{z}{2} + 8 = 9 - \frac{z}{2}$

27. $\frac{1}{2}t + 5 = 4$

28. $\frac{5x}{3} - x = \frac{x}{6} - \frac{5}{2}$

29. $5x + 20x - 6 = 5(5x + 9)$

☐ A. $x =$

☐ B. The equation has infinitely many solutions.

☐ C. The equation has no solution.

30. $3,069x - 2,170 = 31(99x - 70)$

☐ A. $x =$

☐ B. The equation has infinitely many solutions.

☐ C. The equation has no solution.