

REVIEW FOR TEST 1 SOLVING EQUATIONS

- 1) What is the value of t that satisfies the equation below?

$$3(t + 4) - 2(2t + 3) = -4$$

A $-\frac{11}{3}$

B $-\frac{4}{5}$

C 10

D 11

- 2) $\frac{2}{3}(3x + 6) = 4x + 3.$

- 3) Koby's solution for $4(x - 3) = \frac{1}{2}x + 2$ is shown at the right. Did he solve the equation correctly? Explain why or why not.

$$4(x - 3) = \frac{1}{2}x + 2$$

$$4x - 12 = \frac{1}{2}x + 2$$

$$2 \cdot (4x - 12) = 2 \cdot \left(\frac{1}{2}x + 2\right)$$

$$8x - 12 = x + 2$$

$$8x = x + 14$$

$$\frac{7x}{7} = \frac{14}{7}$$

$$x = 2$$

4 Consider the equation $cx - d = 2x + 4$.

- a. Replace c in the equation with 2. For what value of d would the equation have infinitely many solutions? Explain.

- b. Replace d in the equation with 2. For what value of c would the equation have no solution? Explain.

5 Evelyn says that the equation $3(x - 3) + 5 = 3x + 1 + 4$ has infinitely many solutions because the variable terms on each side are the same. Do you agree with Evelyn? Explain why or why not.

6 Explain why the equation $5(2x + 1) - 2 = 6x + 5$ has only one solution. Then find the solution.

7 Write an equation that has one solution, an equation that has no solution, and an equation that has infinitely many solutions. Each equation should have one variable term on each side and a total of four terms.

One solution: _____

No solution: _____

Infinitely many solutions: _____

Solve the equation: $4n = \frac{1}{2}(2n - 12)$.

$$6x + 5 = 5x + 8 + 2x?$$

$$16 - \frac{1}{2}x = \frac{3}{4}x + 1?$$

$$24x + 4 + 2x = 3(10x - 1)$$

Solve and Determine the whether the equation has one solution, no solution, or an infinite number of solutions

$$6p - 4 = -2(-3p + 2)$$

Number of Solutions

$$12x + 8 + 2x = 7(2x + 1)$$

Number of Solutions

$$5y + 12 = -5y - 8$$

Number of Solutions

$$12s = 4(3s - 9)$$

Number of Solutions

$$3(2 - 6m) = -15m - 3m - 6$$

Number of Solutions

$$15d = 20 - 5d$$

Number of Solutions

$$6n + 8 = \frac{1}{2}(12n + 16)$$

Number of Solutions

$$12q + 2 = 6(2q + 2)$$

Number of Solutions

Solve the following equations. Some equations will have a single answer, others will have no solution, and still others will have infinite solutions.

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

2. $3(x - 1) = 2x + 9$

3. $2x + 8 = 2(x + 4)$

4. $2x - x + 7 = x + 3 + 4$

5. $-2(x + 1) = -2x + 5$

6. $4x + 2x + 2 = 3x - 7$

7. $2(x + 2) + 3x = 2(x + 1) + 1$

8. $4(x - 1) = \frac{1}{2}(x - 8)$

9. $x + 2x + 7 = 3x - 7$

10. $3x - x + 4 = 4(2x - 1)$

11. $4(2x + 1) = 5x + 3x + 9$

12. $10 + x = 5\left(\frac{1}{5}x + 2\right)$

13. $8(x + 2) = 2x + 16$

14. $3 + \frac{3}{2}x + 4 = 4x - \frac{5}{2}x$

15. $\frac{3}{2}(2x + 6) = 3x + 9$

16. $\frac{1}{2}(2 - 4x) + 2x = 13$

17. $12 + 2x - x = 9x + 6$

18. $4x + 1 = 2(2x + 3)$

19. $4(x + 3) - 4 = 8\left(\frac{1}{2}x + 1\right)$

20. $x + 5x + 4 = 3(2x - 1)$

21. $5(x + 2) - 3x = 2(x + 5)$

22. $3x + 1 = 3(x - 1) + 4$

23. $4x + 2x - 5 = 7x - 1$

24. $-2(x + 1) = 2(x - 1)$

25. $2(x + 5) = 2x + 5$

26. $2(3x + 3) = 3(2x + 2)$

27. $2x + 1 - 4 = -2x - 3$

28. $4(x + 1) = 4(2 - x)$

29. $3x + 7x + 1 = 2(5x + 1)$

30. $6(x + 1) + 5 = 13 - 2 + 6x$