

Solving Basic Equations Quiz Review Sheet

Directions: Show all work, communicate your thought process, and justify your reasoning. Remember to check that your answers are complete, correct, and reasonable. If you complete work on scrap paper, please attach it. Check your work with the answer key (will be posted on the website), and let us know if you have any questions!

PART A: Isolate the variable in each equation. Show all work & check your solution.

1. $17 = 5 - q$	2. $\frac{1}{4}h = 6$	3. $3d - 12 = 30$	4. $-6j = -48$
5. $7(m + 1) = 3(2m - 3)$	6. $5k - 8 = -7k + 4$	7. $3(w - 8) = -27$	8. $\frac{y}{9} + 3 = 6$
9. $9 = 7K - 12$	10. $8p + 13 = 45$	11. $7x + 1 = 13x + 43$	12. $n - 5 = -23$

13. $9(y - 8) = 0$	14. $9y = 0$	15. $9 + y = 0$	16. $9y - 9 = 0$
17. $\frac{3}{4}x = -3$	18. $2x + 2 = 2$	19. $3(y - 4) = 2(y - 1)$	20. $\frac{d}{-8} = -7$
21. $\frac{1}{2}x + 8 = -2$	22. $3(2x - 1) = 5x + 5$	23. $\frac{q}{7} = -5$	24. $2(3x + 1) = 4x - 9$

Part B:

25. Describe the steps you would take in solving each equation:

A. $3x + 6 = 5x - 8.$

B. $-5x + 6 = -19$

26. Consider the equation $7x - 8 = 2x + n$, where n is a real number.

If the value of n is increased, will the solution for x be smaller or larger? Explain.

27. Select **all** equations for which $x = -1$ is a solution. There is more than one answer.

☐ $x - 1 = 0$

☐ $2x = -2$

☐ $2x + 1 = -1$

☐ $2(x - 1) = 0$

☐ $\frac{1}{2}x = -1$

☐ $1 + x = 0$

28. A rectangle with an unknown width is shown. The perimeter of the rectangle is 50 feet. Select ALL equations that could be used to determine the width, w . There is more than one answer.

☐ $2w = 50 - 16$

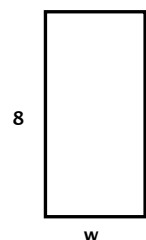
☐ $2w = 50 - 32$

☐ $2(w + 18) = 50$

☐ $2w + 18 = 25$

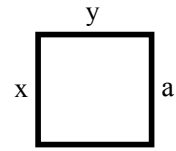
☐ $w + 18 = 25$

☐ $2w + 18 = 50$



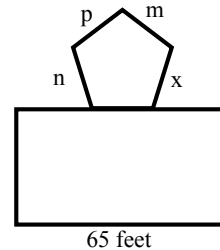
29. The three sides, x , y , and a , of the square-shaped picture frame will be lined with 16 inches of ribbon. Which equation is true?

- A. $a = 16 - x$ B. $a = 16 - 2x$ C. $a = 8$ D. $a = 2x$



30. The figure shows the 65-foot side of a house and a proposed pentagonal garden to be fenced in on four sides. The pentagon is regular, meaning all of its sides are equal in length. The four sides, m , n , p , and x , will be made up of 35 feet of fencing. Which equation is true?

- A. $p = 65 - 4x$ B. $p = 35 - 4x$ C. $p = 65 - 3x$ D. $p = 35 - 3x$



Was there any unnecessary information in this problem? Explain.

31. Assuming the scales are in balance and every square block weighs one pound, describe how you would go about figuring out the weight of one other shape in each situation.

- A. One star weighs..



- B. One heart weighs...

Name: _____

Date: _____

UNIT 1 REVIEWS

