

1.4

Solving Linear, Absolute Value Equations, and Specified Variables (Part 1)

2023-2024

SCORE:

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Name _____ Date _____ Period _____

Solve each equation. Show all your work.

1. $|x| = 4$

2. $|x| - 3 = 7$

3. $2|x| = 30$

4. $x^2 - 36 = 0$

5. $x^4 - 1 = 15$

6. $2x^3 - 5 = 49$

7. $112 = 5(2 + 5x) + 2$

8. $8x - 7x = 5$

9. $-\frac{2}{3} + x = -\frac{47}{48}$

10. $\sqrt{x} - 5 = 11$

11. $3\sqrt{x} + 3 = 15$

12. $5 - 2\sqrt{x} = 3$

Solve each equation. Show all your work.

13. $3x^2 - 75 = 0$

14. $|x| = -8$

15. $-45 = -4x + 3$

16. $\sqrt[3]{x} + 3 = 2$

17. $x^5 = -32$

18. $3|x| + 8 = 22$

19. $2 = \frac{x-10}{3}$

20. $-\sqrt{x} + 3 = -9$

21. $9x^2 - 49 = 0$

Solve for the specified variable. Show work!

22. $y = 5x - 6$ (solve for x)

23. $2x - 3y = 8$ (solve for y)

24. $7x - y = 14$ (solve for x)

25. $P = \frac{R-C}{N}$ (solve for R)

26. $A = \frac{x+y}{2}$ (solve for y)

27. $\frac{cx}{d} + f = b$ (solve for x)

Read the following situations. Define your variable then answer the question. Show your work.

28. Luis and three friends went golfing. Two of the friends rented clubs for \$6 each. (Luis and the other friend have their own clubs.) The total cost of the rented clubs and green fees for the group was \$76. What was the cost of the green fee for each person?

29. George received a 94% on the first test of the quarter and an 89% on the second test of the quarter. In order to go to the football game next week, he must have an average higher than 93%. What is the lowest score he can get on the third test so he can go to the football game?

30. A machine is used to fill a bag with 4 pounds of granulated sugar. After the bags are filled, another machine weighs them. If the bag weighs 0.3 ounces more or less than the desired weight, the bag is rejected. What is the heaviest and lightest bag the machine will approve? Leave answer in ounces. (1 pound = 16 ounces)

Review

Suppose that the revenue R , in dollars, from selling x snow cones, **in hundreds**, is $R(x) = 3x^2 + x - 2$. The cost C , in dollars, of selling x snow cones is $C(x) = x - 50$.

31. Find the profit function, $P(x) = R(x) - C(x)$.

32. Find $P(50)$ and Explain, in words, what the answer means.

33. Find the x -value when $P(x) = 100$. (hint: replace $P(x)$ with 100)
Explain, in words, what the answer means.