Lesson 1-5: Solve Equations Using Square Roots and Cube Roots

1. Sample answer: To solve equations with squares, take the square root of each side of the equation. To solve an equation with cubes, take the cube root of each side of the equation.

2. Sample answer: She forgot that there is also a negative solution. 7 x 7 = 49 and - 7 x - 7 = 49.

3. Sample answer: There is only one solution to the equation because - 5 x - 5 x - 5 = - 125, not 125. The correct solution is x = 5.

4. Sample answer: The solutions are irrational because 17 is not a perfect square.

5. s = 3 cm

6. s = 11 cm

7. $x = \sqrt[3]{-215}$

8. z^2; 1; 1; 1; - 1

9. a^3 ; 216; 6

10. $v = \sqrt{47}$ and $-\sqrt{47}$

11. Each side of the photo is 3 inches long.

12. y = 9, -9

13. w = 10

14. 11 ft

15. $b = \pm \sqrt{77}$

16. 12

17. $v = \sqrt[3]{12}$

18. Sample answer: $\sqrt[3]{-\frac{8}{27}}$ is $-\frac{2}{3}$ because $-\frac{2}{3}$ x $-\frac{2}{3}$ x $-\frac{2}{3}$ = $-\frac{8}{27}$

19. No; Sample answer: Manolo needs to include both the positive and negative solutions of the equation.

20. a. - 8
    b. Sample answer: I can cube the result. $- 8^3$ = - 512

21. 18.5 feet

22. $3,610

23. a. 4 feet
    b. Yes; Sample answer: The size of the painting is 12 square feet which is less than 4^2 = 16 square feet.