Palomar College Math Placement Test Study Guide Intermediate Algebra

Topic 9: Quadratic Equations

Find all real solutions.

1.	Solve:	$x^2 + 8x + 15 = 0$
2.	Solve:	$6z^2 = 10z$
3.	Solve:	(x-1)(3x-4) = 2
4.	Solve:	$(2x-3)^2 = 49$
5.	Solve:	$4x^2 + 20x + 25 = 0$
6.	Solve:	$4x^2 = 7x + 2$
7.	Solve:	$16x^2 - 10 = 30$
8.	Solve:	$y^2 - 3y + 1 = 0$
9.	Solve:	$x^2 + 4 = 0$
10.	Solve:	$x^4 - 13x^2 + 36 = 0$
11.	Solve:	$y^{2/3} - 2y^{1/3} - 8 = 0$
12.	Solve:	$x^2 - 9 > 0$
13.	Solve:	$x^2 + x - 12 \le 0$

- 14. The length of a rectangle is 3 feet less than twice its width, W. The area of the rectangle is 104 ft^2 . Which of the following equations could be used to find the width of the rectangle?
 - a. 2W + 2W 3 = 104
 - b. 2W + 2(2W 3) = 104
 - c. 2W(2W 3) = 104

- d.
- W(2W 3) = 104W(2W + 3) = 104e.
- Find the dimensions of the rectangle in the previous problem by solving the appropriate equation. 15.

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Answers:

1.
$$x = -3 \text{ or } x = -5$$

2. $z = 0 \text{ or } z = 5/3$
3. $x = 2 \text{ or } x = 1/3$
4. $x = 5 \text{ or } x = -2$
5. $x = -5/2$
6. $x = 2 \text{ or } x = -\frac{1}{4}$
7. $x = \frac{\sqrt{10}}{2} \text{ or } x = -\frac{\sqrt{10}}{2}$
8. $y = \frac{3 + \sqrt{5}}{2} \text{ or } y = \frac{3 - \sqrt{5}}{2}$
9. No real solution
10. $x = 3, -3, 2, -2$
11. $y = -8 \text{ or } y = 64$
12. $(-\infty, -3) \cup (3, \infty)$
13. $-4 \le x \le 3$
14. (d)

15. The width is 8 feet.