Name: Date:
Instructor: Section:

Practice Set 8.1

Use the choices to fill in each blank.

a	c	one-half	perfect square	completing the square
b	c^2	twice	binomial	square root

1. To solve a quadratic equation by completing the square, add a constant to both sides of the equation so that the remaining trinomial is a _____.

2. If $x^2 = a$, where a is a real number, then $x = \pm\sqrt{a}$ is called the _____ property.

3. To complete the square, take _____ of the numerical coefficient of the first degree term, square it, and add it to both sides of the equation.

4. If $ax^2 + bx + c$ is a perfect square trinomial, $\left(\dfrac{b}{2}\right)^2$ must equal _____.

Use the square root property to solve each equation.

5. $x^2 - 64 = 0$ 6. $x^2 + 64 = 0$

7. $x^2 + 12 = 0$ 8. $x^2 - 13 = 5$

9. $\left(x + \dfrac{1}{2}\right)^2 = \dfrac{25}{4}$ 10. $\left(b - \dfrac{1}{3}\right)^2 = \dfrac{16}{49}$

11. $(x + 0.3)^2 = 0.09$ 12. $(3a - 1)^2 = 20$

5._____

6._____

7._____

8._____

9._____

10._____

11._____

12._____

Solve each equation by completing the square.

13. $x^2 + 4x - 5 = 0$ 14. $x^2 + 6x + 3 = 0$

15. $x^2 + 3x - 7 = 0$ 16. $x^2 - 5x + 25 = 0$

17. $-x^2 + 7x - 11 = 0$ 18. $2x^2 + x = 1$

13._____

14._____

15._____

16._____

17._____

18._____

Problem Solving

19. The area of a rectangle is 16 cm². The length and width of the rectangle are $x + 3$ cm and $x - 3$ cm. Find x.

19._____

20. $5000 is invested in an account where interest is compounded annually. After 2 years there is $5512.50 in the account. Find the interest rate.

20._____

21. The distance, d, an object travels can be computed using the formula $d = v_0 t + \dfrac{1}{2}at^2$. Find the time, t, it takes to travel a distance, d, of 100 feet, when the initial speed, v_0, is 30 ft/sec and the constant of acceleration, a, is 10 ft/sec².

21._____

Angel/Runde, *Intermediate Algebra for College Students,* 9e