

Homework 5.6 Solving Quadratics Part 3

Answer the following questions about solving quadratics.

1. What are the solving methods to solve for quadratic equations? Fill in the methods in the diagram below.

<u>2 Terms (Binomials)</u>	<u>3 Terms (Trinomials)</u>
1. _____	1. _____
2. _____	2. _____
3. _____	3. _____
	4. _____

2. In order to solve for x by using the complete the square method, you must _____.

3. In order to solve for x by using the quadratic formula method, you must _____.

4. How do we determine how many solutions a quadratic equation has?

_____.

Determine the number of roots each quadratic will have.

5. $-5a^2 + 10a - 6$

6. $-3n^2 + 11n - 10 = 0$

7. $8x^2 + 6x - 12 = 0$

8. $-v^2 + 4v + 5 = 9$

9. $5x^2 - 10x + 18 = 13$

10. $-4x^2 + x - 15 = -13$

Solve by completing the square method.

11. $a^2 + 14a - 51 = 0$

12. $x^2 - 12x + 11 = 0$

13. $x^2 + 14x = 15$

14. $k^2 + 23 = 12k$

15. $x^2 + 5x + 6 = 0$

16. $x^2 - 8x + 6 = 0$

Solve by using the quadratic formula method.

17. $6x^2 + 4x - 20 = 0$

18. $11b^2 - 16 = -8b$

19. $x^2 + 14x = 15$

20. $k^2 + 23 = 12k$

21. $a^2 + 14a - 51 = 0$

22. $x^2 - 12x + 11 = 0$

5.6 Answers

Page 1 **1** 2 Terms: 1. GCF Factoring, 2. Differences of Squares; 3 Terms: 1. GCF Factoring, 2. Factoring Trinomials, 3. Completing the Square, 4. Quadratic Formula **2** isolate the constant term **3** set the equation to zero **4** Use the discriminant; $b^2 - 4ac$ **4** **5** 1 real solution **6** 2 real solutions **7** No solution **8** 1 real solution **9** 1 real solution **10** No real solutions **11** $a = 3, a = -17$
12 $x = 11, x = 1$

Page 2 **13** $x = 1, x = -15$ **14** $k = 6 + \sqrt{13}, k = 6 - \sqrt{13}$ **15** $x = -2, x = 3$

16 $x = 4 + \sqrt{10}, x = 4 - \sqrt{10}$ **17** $x = -\frac{1}{3} + \frac{\sqrt{31}}{3}, x = -\frac{1}{3} - \frac{\sqrt{31}}{3}$ **18** $b = -\frac{4}{11} - \frac{8\sqrt{3}}{11}, b = -\frac{4}{11} + \frac{8\sqrt{3}}{11}$

19 $x = 1, x = -15$ **20** $k = 6 + \sqrt{13}, k = 6 - \sqrt{13}$ **21** $a = 3, a = -17$ **22** $x = 11, x = 1$