

Name _____

Algebra II Vertex form and completing the square

Solve using the complete the square method:

1. $x^2 - 8x + 10 = 0$

2. $x^2 + 6x = 6$

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

4. $8x^2 + 16x = 42$

5. $4x^2 + 8x - 16 = 20$

6. $2x^2 - x = 14$

7. $3x^2 + 5x = x + 3$

8. $-x^2 - 2x = 3$

9. $2x^2 + 10x = x^2 - 8x$

10. $2x^2 + 12 = -x + 10$

Use the complete the square method to rewrite the function in vertex form (11-20)

11. $y = x^2 - 14x + 6$

12. $y = x^2 - 3x + 3$

13. $y = -x^2 + 5x - 2$

14. $y = 3x^2 + 9x + 5$

$$15. y = -2x^2 - 8x + 2$$

$$16. y = 3x^2 + 12x - 2$$

$$17. y = -4x^2 + 2x + 9$$

$$18. y = \frac{1}{2}x^2 + 4x + 2$$

$$19. y = 2x^2 + 10x - 1$$

$$20. y = 2x^2 - 4x + 3$$

Mixed review

21. Write as a single log: $\log_7 x + \log_7 y - 2\log_7 z$ _____

For #22-23: evaluate:

$$22. 2\log_3 3 - \log_3 3$$

$$23. \log_6 4 + \log_6 9$$

For #24-29: Solve

$$24. 14^{x+1} = 36$$

$$25. 5^x = 81.2$$

$$26. \log(3x + 1) = 2$$

$$27. \log_6 x - 3 = -4$$

$$28. 2\log(x + 1) = 5$$

$$29. 2\log x + \log 4 = 2$$