

Chapter 4 Study Guide (4.1-4.6)

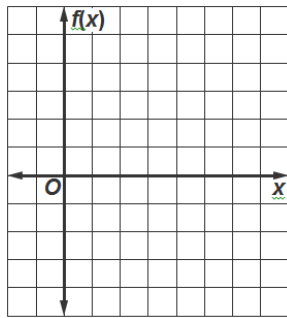
NOT HOMEWORK

Name: _____ Date: _____ Period: _____

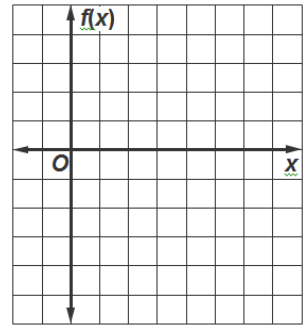
Complete all parts for each quadratic function.

- Find the y -intercept, the axis of symmetry, and the vertex.
- Make a table and graph the parabola
- Determine whether each function has a maximum or a minimum value, and find it
- Find the roots. If exact roots cannot be found, state the numbers between which the roots are located

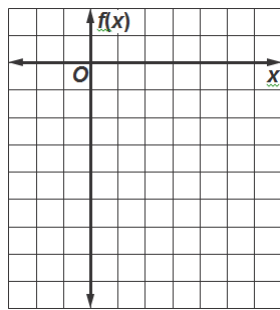
1. $f(x) = x^2 - 6x + 5$



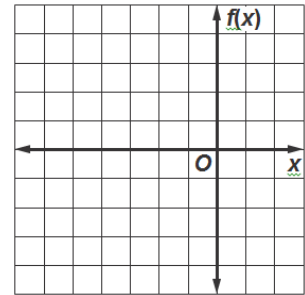
3. $f(x) = x^2 - 6x + 4$



2. $f(x) = -x^2 + 2x - 4$



4. $f(x) = -x^2 - 3x$



Solve each equation by factoring.

5. $x^2 - 9 = 0$

10. $50x^2 + 100x = 0$

15. $x^2 - 6x + 9 = 0$

6. $x^2 - 10x + 25 = 0$

11. $6x^2 - 5x + 1 = 0$

16. $x^2 - 4x - 21 = 0$

7. $3x^2 + 9x = 0$

12. $4x^2 - 4x - 3 = 0$

17. $4x^2 + 5x - 6 = 0$

8. $8x^2 - 64x = 0$

13. $x^2 - 64 = 0$

18. $25x^2 - 81 = 0$

9. $x^2 - 3x + 2 = 0$

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

19. $2x^2 + 5x - 3 = 0$

Simplify the following.

20. $\sqrt{-96}$

23. $\sqrt{-45}$

26. $\sqrt{54}$

29. $\sqrt{-8}$

21. $\sqrt{36}$

24. $\sqrt{-18}$

27. $\sqrt{-121}$

30. $\sqrt{-16}$

22. $\sqrt{72}$

25. $\sqrt{-14}$

28. $\sqrt{-1}$

31. $\sqrt{2}$

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Solve each equation by using the Square Root Property.

32. $2x^2 = 32$

36. $5x^2 + 5 = 0$

40. $x^2 + 12x + 36 = -25$

33. $2x^2 + 8 = 0$

37. $x^2 - 9 = 3$

41. $x^2 + 4x + 4 = 2$

34. $x^2 + 36 = 0$

38. $x^2 - 8x + 16 = 1$

42. $x^2 - 2x + 1 = 5$

35. $x^2 - 4 = -3$

39. $x^2 + 4x + 4 = -1$

43. $x^2 - 6x + 9 = -7$

Find the value of c that makes each trinomial a perfect square. Then write the trinomial as a perfect square.

32. $x^2 + 10x + c$

34. $x^2 + 24x + c$

36. $x^2 - 9x + c$

33. $x^2 - 14x + c$

35. $x^2 + 5x + c$

37. $x^2 - x + c$

Solve each equation by Completing the Square.

38. $x^2 + 2x - 8 = 0$

41. $x^2 + 8x + 10 = 0$

44. $x^2 + 6x + 8 = 0$

39. $x^2 - 4x + 9 = 0$

42. $x^2 - 4x + 12 = 0$

45. $x^2 - 4x + 3 = 0$

40. $x^2 + 4x + 6 = 0$

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

Solve each equation using the Quadratic Formula.

46. $x^2 + 10x = -24$

49. $x^2 - 6x + 21 = 0$

52. $4x^2 - 12x - 63 = 0$

47. $3x^2 - 16x + 16 = 0$

50. $2x^2 - x - 15 = 0$

53. $2x^2 + x - 10 = 5$

48. $x^2 - 10x - 50 = 0$

51. $x^2 - 11x + 20 = -4$