DUE: A-day Tuesday 10/08/15, B-day Wednesday 10/09/15

Pre-Calculus: Lesson 2.1 Quadratic Functions p. 96 #17-43 odd

Please complete the assignment using the "tri-fold" method (You may use www.calcchat.com to check your work):

Identifying the Vertex of a Quadratic Function **In Exercises 17–30, describe the graph of the function and identify the vertex. Use a graphing utility to verify your results.**

17. $f(x) = 25 - x^2$

18. $f(x) = x^2 - 7$

19. $f(x) = \frac{1}{2}x^2 - 4$

20. $f(x) = 16 - \frac{1}{4}x^2$

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

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

23. $h(x) = x^2 - 8x + 16$

24. $g(x) = x^2 + 2x + 1$

25. $f(x) = x^2 - x + \frac{5}{4}$

26. $f(x) = x^2 + 3x + \frac{1}{4}$

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

28. $f(x) = -x^2 - 4x + 1$

29. $h(x) = 4x^2 - 4x + 21$

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

Identifying *x*-Intercepts of a Quadratic Function **In Exercises 31–36, describe the graph of the quadratic function. Identify the vertex and *x*-intercept(s). Use a graphing utility to verify your results.**

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

32. $f(x) = -(x^2 + x - 30)$

33. $g(x) = x^2 + 8x + 11$

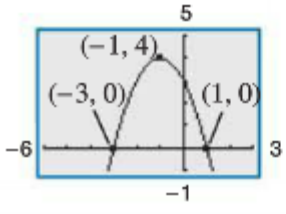
34. $f(x) = x^2 + 10x + 14$

35. $f(x) = -2x^2 + 16x - 31$

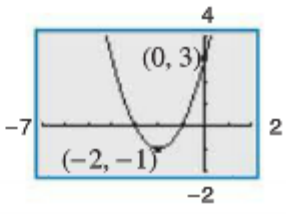
36. $f(x) = -4x^2 + 24x - 41$

Writing the Equation of a Parabola in Standard Form **In Exercises 37 and 38, write an equation of the parabola in standard form. Use a graphing utility to graph the equation and verify your result.**

37.



38.



Writing the Equation of a Parabola in Standard Form **In Exercises 39–44, write the standard form of the quadratic function that has the indicated vertex and whose graph passes through the given point. Use a graphing utility to verify your result.**

39. Vertex: $(-2, 5)$; Point: $(0, 9)$

40. Vertex: $(4, 1)$; Point: $(6, -7)$

41. Vertex: $(1, -2)$; Point: $(-1, 14)$

42. Vertex: $(-4, -1)$; Point: $(-2, 4)$

43. Vertex: $\left(\frac{1}{2}, 1\right)$; Point: $\left(-2, -\frac{21}{5}\right)$

44. Vertex: $\left(-\frac{1}{4}, -1\right)$; Point: $\left(0, -\frac{17}{16}\right)$