**Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Advanced Algebra II – Assignment 4-4**

4-62 One way of writing a general equation for a parabola is y = a(x-h)2 + k. This equation tells you how to start with the parent graph y = x2 and shift or stretch it to get any other parabola.

1. Explain what each parameter (a, h, and k) represent in the graph of a parabola.

4-71 Write the equation y = x2 + 7x – 8 in graphing form. Use what you learned about finding the vertex to help you.

4-79 By mistake, Jim graphed y = x3 – 4x instead of y = x3 – 4x + 6. What should he do to correct his graph?

4-119 A parabola has a vertex (2,3) and contains the point (0,0).

1. If the parabola is a function, find its equation.
2. Suppose this parabola is not a function, but is a *sleeping parabola*. Find its equation.

4-120 The quadratic formula can be used to help solve 4x3 +23x2 – 2x = 0. Show or explain how.

4-133 Solve by completing the square.

a. x2 – 4x + 8 = 20 b. x2 + 2x - 5 = 30

4-135 For each quadratic function below, use completing the square to so write the equation in graphing form. Then find the vertex of each parabola.

a. f(x) = x2 + 6x + 15 b. f(x) = x2 – 4x + 9

c. f(x) = x2 + 8x d. f(x) = x2 + 5x - 2