

Math 98 Worksheet #8
July 31, 2007

1. $f(x) = -\frac{1}{3}(x + 4)^2 + 1$
 - (a) What is the vertex of the graph of f ?
 - (b) Does f open up or down? Is it narrower or wider than x^2 ?
 - (c) Sketch a graph of f including two points other than the vertex.

2. $g(x) = x^2 - 12x + 40$
 - (a) Write $g(x) = x^2 - 12x + 40$ in vertex form by completing the square.
 - (b) What is the vertex of the graph of g ?
 - (c) What is the domain and range of g ?

3. Use the vertex formula to find the vertex of the following quadratic functions. Does the parabola open up or down? Is it narrower or wider than x^2 ?
 - (a) $h(x) = 3x^2 + 6x - 7$
 - (b) $F(x) = -2x^2 + 12x + 2$
 - (c) $G(x) = x^2 + 5x$