Name: _____

Parabolas

1) Write the equation for the parabolas.

    1) Vertex (0, 0), passing through (1, 12), and symmetric about the axis x = 0

    2) Vertex (2, 0), symmetric about the x-axis, and passing through (3, 2)

2) Find the equations for the parabolas described below:

    1) Vertex is 2 units from the x-axis, opens downward, symmetric about x=1, y-intercept = $\frac{23}{12}$

    2) Has vertical axis of symmetry and passes through $(-2,3)$, $(0,3)$ and $(1,9)$

    3) Opens upward, passes through $(-2,7)$, vertex on the positive y-axis and 5 units from the origin

    4) Opens to the right, has its vertex at $(2,2)$ and passes through the point $(5,0)$

3) For each parabola described, use the information given to find the location of the missing feature. It may help to draw a sketch.

    1) If the vertex is (0, 0) and the focus is (4, 0), where is the directrix?

    2) If the focus is (0, 7) and the directrix is *y*=-3, where is the vertex?

    3) If the vertex is (5, 0) and the directrix is *x* = 1.5, where is the focus?

    4) If the focus is (2, -3) and the directrix is *x*=-1, where is the vertex?

    5) If the focus is (-3, -1) and the vertex is (-3, 4), where is the directrix?