Accelerated Precalculus
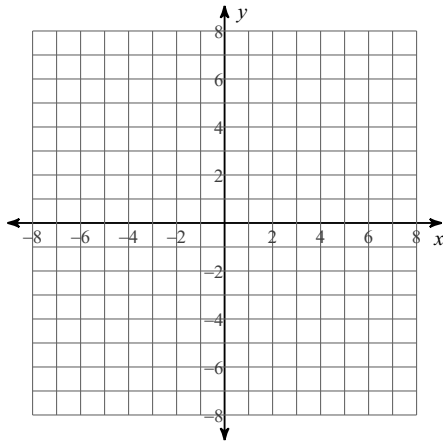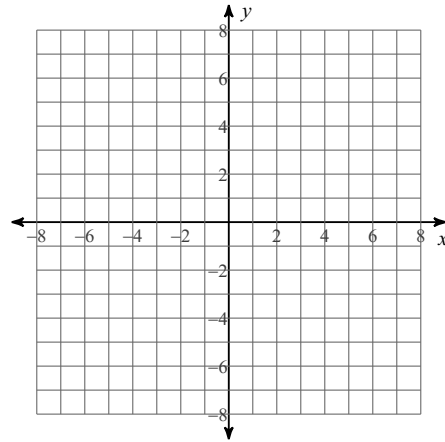
Name_____

Graphing Conics

Date_____ Period_____

Identify the center and radius of each. Then sketch the graph.

1) $13 + 4y = -y^2 - x^2 + 8x$

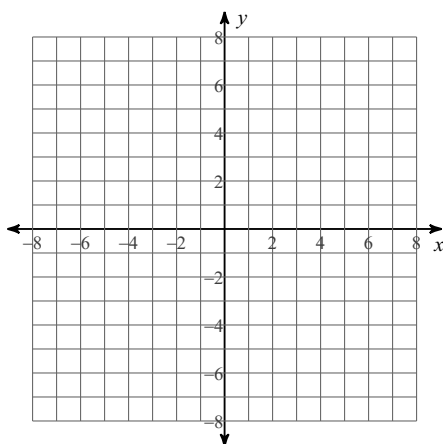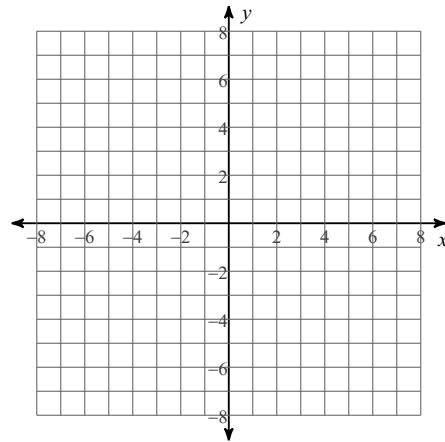2) $(x-1)^2 + (y-1)^2 = 3$

Identify the center, vertices, co-vertices, and foci of each. Then sketch the graph.

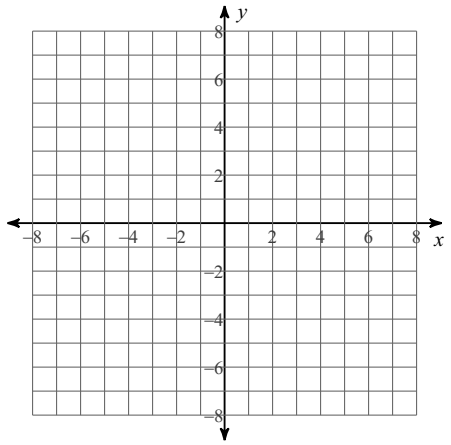3) $(x-2)^2 + \dfrac{(y-2)^2}{4} = 1$
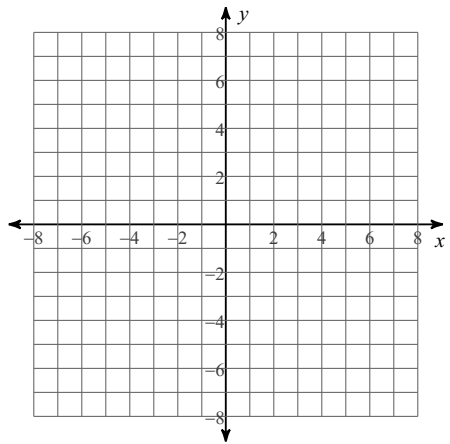

4) $4x^2 + 9y^2 + 24x + 36y + 36 = 0$

Identify the vertices and foci of each. Then sketch the graph.

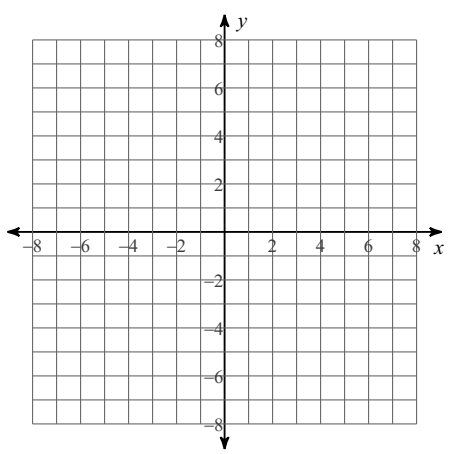5) $\dfrac{(x-1)^2}{16} - \dfrac{y^2}{25} = 1$

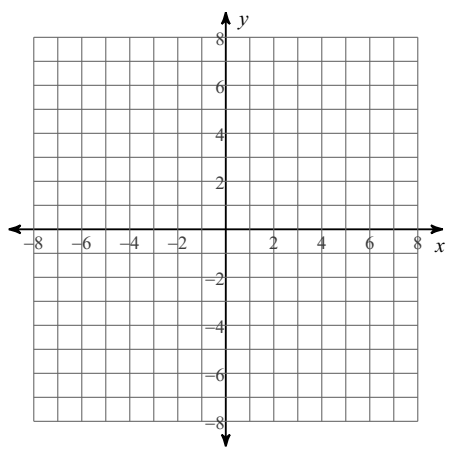6) $y^2 - 9 = -6x - 2y + x^2$

Identify the vertex, focus, axis of symmetry, and directrix of each. Then sketch the graph.
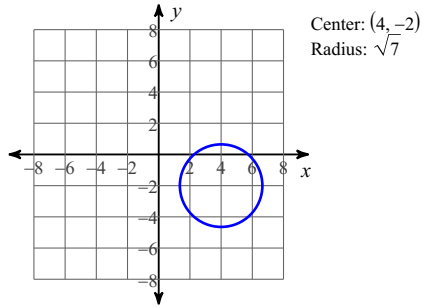
7) $\dfrac{1}{2}(x+2) = (y-1)^2$
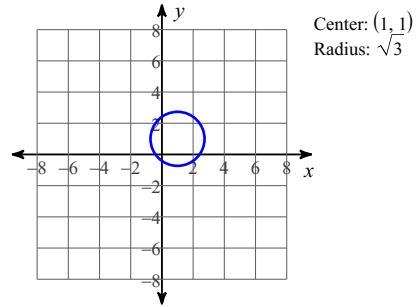
8) $-x^2 + 4x + y - 5 = 0$
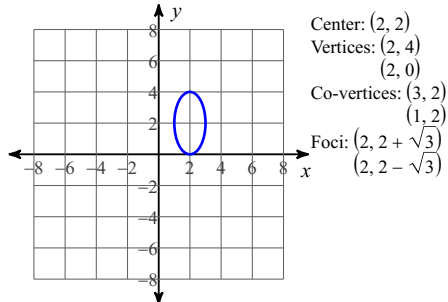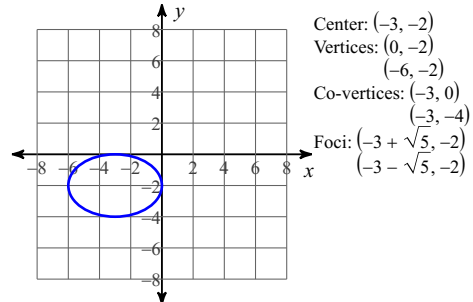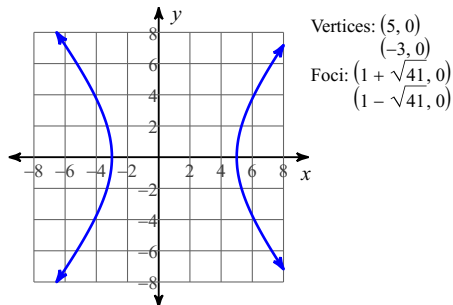
Answers to Graphing Conics

1)

Center: $(4, -2)$
Radius: $\sqrt{7}$

2)

Center: $(1, 1)$
Radius: $\sqrt{3}$

3)

Center: $(2, 2)$
Vertices: $(2, 4)$
        $(2, 0)$
Co-vertices: $(3, 2)$
        $(1, 2)$
Foci: $(2, 2 + \sqrt{3})$
      $(2, 2 - \sqrt{3})$

4)

Center: $(-3, -2)$
Vertices: $(0, -2)$
        $(-6, -2)$
Co-vertices: $(-3, 0)$
        $(-3, -4)$
Foci: $(-3 + \sqrt{5}, -2)$
      $(-3 - \sqrt{5}, -2)$

5)

Vertices: $(5, 0)$
        $(-3, 0)$
Foci: $(1 + \sqrt{41}, 0)$
      $(1 - \sqrt{41}, 0)$

6)

Vertices: $(3, 0)$
        $(3, -2)$
Foci: $(3, -1 + \sqrt{2})$
      $(3, -1 - \sqrt{2})$

7)

Vertex: $(-2, 1)$
Focus: $\left(-\frac{15}{8}, 1\right)$
Axis of Sym.: $y = 1$
Directrix: $x = -\frac{17}{8}$

8)

Vertex: $(2, 1)$
Focus: $\left(2, \frac{5}{4}\right)$
Axis of Sym.: $x = 2$
Directrix: $y = \frac{3}{4}$