Use completing the square to rewrite the equation in one of the standard forms for a conic and identify the conic.

1) x2 + 12x - y + 30 = 0

Find the equation of the parabola determined by the given information.

2) Vertex at the origin, focus at (0, 3)

Find the equation of the hyperbola.

3) Vertices at (0, 8) and (0, -8), foci at (0, 9) and (0, -9)

Find the vertex of the parabola, and determine whether the parabola opens upward, downward, to the left, or to the right.

4) y = -(x + 2)2 + 2

Identify the equation as a parabola, ellipse, or circle.

5) y2 = 36 – x2

Find all the terms of the finite sequence.

6) an = 2n - 2 , 1 ≤ n ≤ 5

Identify the equation as a parabola, circle, ellipse, or hyperbola.

7) x2 – y2 = 49