

## Hyperbolas – Writing Equations

### Example 5:

Write the equation of the hyperbola in standard form.

$$9x^2 - y^2 + 36x + 2y + 26 = 0$$

### Example 6:

Write the equation of the hyperbola in standard form.

$$3x^2 - 2y^2 - 24x - 8y + 34 = 0$$

### Example 7:

Write the standard form of the equation of the specified hyperbola.

a. vertices  $(\pm 3, 0)$ ; foci  $(\pm 4, 0)$

b. vertices  $(0, \pm 1)$ ; asymptotes  $y = \pm \frac{1}{2}x$

c. vertices  $(3, 0)$  and  $(3, 2)$ ; foci  $(3, -2)$  and  $(3, 4)$

d. vertices  $(0, 3)$  and  $(4, 3)$ ; asymptotes  $y - 3 = \pm 1(x - 2)$