

Conics

Parabola the set of all points in a plane equidistance from a given fixed point called the \_\_\_\_\_ and a given fixed line called the \_\_\_\_\_

Ellipse the set of all points in a plane whose distances from two fixed points called the \_\_\_\_\_ have a constant sum.

Hyperbola the set of all points in a plane whose distances from two fixed points called the \_\_\_\_\_ have a constant difference.

Parabolas:

$$y^2 - 6y - 8x + 1 = 0$$

$$F(7, -1) \quad y = -9 \text{ directrix}$$

$$V(5, -2) \quad F(7, -2)$$

Ellipses

$$9x^2 - 72x + 4y^2 + 16y + 124 = 0$$

$$F(0, -2)(0, 2)$$

$$\text{Vertices}(0, -6)(0, 6)$$

$$\text{Center}(0, 0)$$

Hyperbola

$$9y^2 - 4x^2 - 18y + 24x - 63 = 0$$

$$F(0, -3)(0, 3)$$

$$V(0, -1)(0, 1)$$

$$\text{Center}(0, 0)$$