

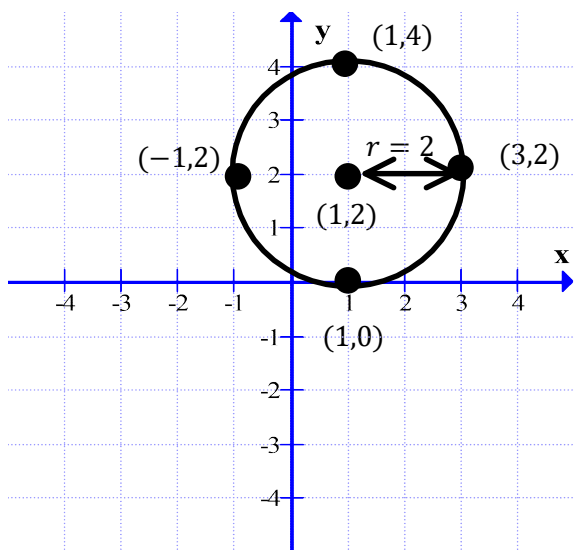
C12 - 12.0 - Conics Review

Minor Axis = 6

Major Axis = 8

Circles

$$(x - 1)^2 + (y - 2)^2 = 4$$

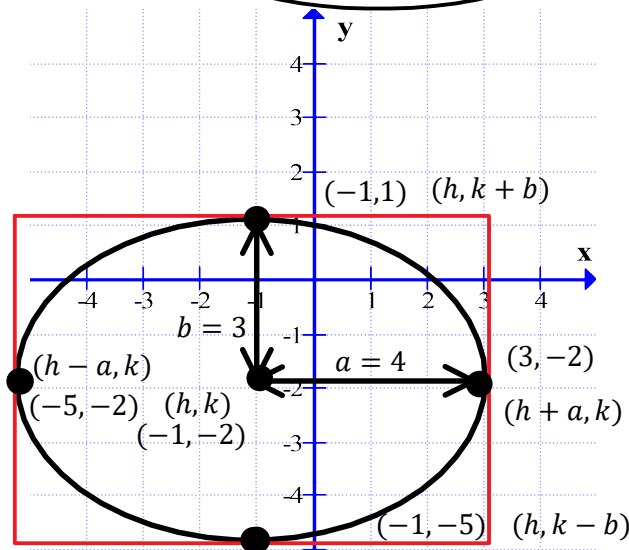


$$(x - h)^2 + (y - k)^2 = r^2 \quad \text{Center: } (h, k)$$

$$(x - 1)^2 + (y - 2)^2 = 2^2 \quad \text{Center: } (1, 2)$$

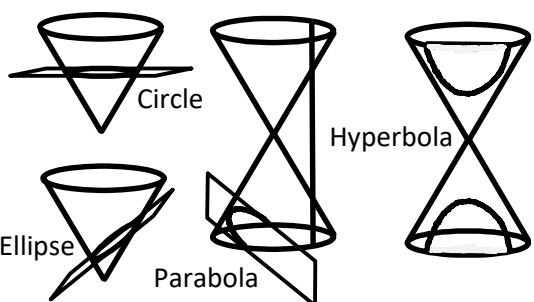
Ellipse

$$\frac{(x + 1)^2}{16} + \frac{(y + 2)^2}{9} = 1$$



$$\frac{(x - h)^2}{a^2} + \frac{(y - k)^2}{b^2} = 1 \quad \text{Center: } (h, k)$$

$$\frac{(x + 1)^2}{4^2} + \frac{(y + 2)^2}{3^2} = 1 \quad \text{Center: } (-1, -2)$$

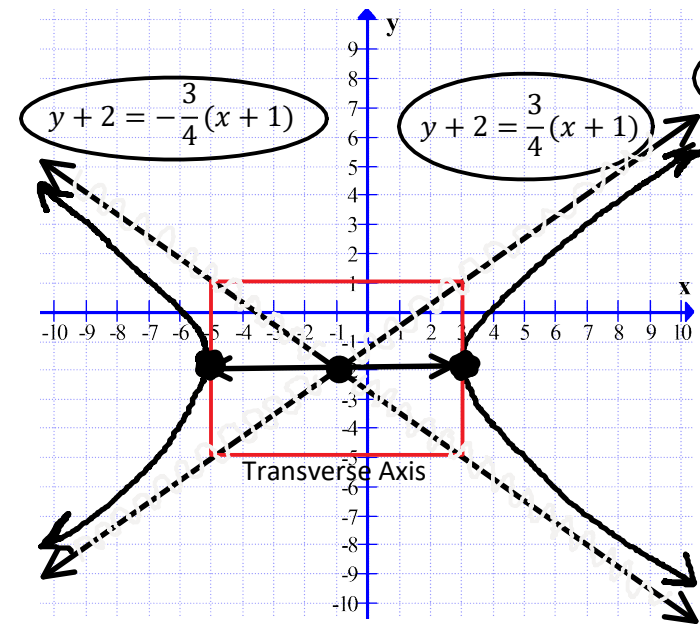


$$9x^2 + 18x - 16y^2 - 64y - 199 = 0 \quad \text{Complete Square}$$

$$9(x + 1)^2 - 16(y + 2)^2 = 144 \quad \text{Divide Both Sides}$$

$$\frac{(x + 1)^2}{16} - \frac{(y + 2)^2}{9} = 1 \quad \text{Center: } (h, k)$$

Reverse: Multiply by LCD, Distribute, Combine, Get = 0



$$\frac{(x + 1)^2}{16} - \frac{(y + 2)^2}{9} = 1 \quad \text{Hyperbola}$$

Asymptotes:

$$y - k = m(x - h) \quad m = \pm \frac{b}{a}$$

Get = +1

$x^2 - y^2$; x first, Opens in x - direction

$y^2 - x^2$; y first, Opens in y - direction

= -1 Opposite!