

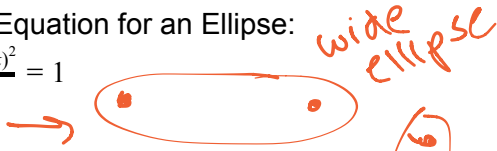
9.2 Ellipses

Homework: Worksheet - Eoy tomorrow

Warm-Up: None

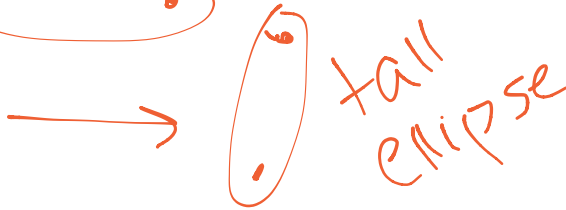
Standard Equation for an Ellipse:

$$\frac{(x-h)^2}{a^2} + \frac{(y-k)^2}{b^2} = 1$$



Or

$$\frac{(x-h)^2}{b^2} + \frac{(y-k)^2}{a^2} = 1$$



Things to know:

- "a" always goes under the longer axis
- The foci lie on the major axis (the longer axis) and are "c" units from the center. $c^2 = a^2 - b^2$

Example 1:

Determine the center and foci. Then, graph the function.

$$\frac{x^2}{9} + \frac{y^2}{25} = 1$$

$$a^2 = 25$$

$$a = 5 \quad c^2 = a^2 - b^2$$

$$b^2 = 9 \quad c^2 = 25 - 9$$

$$b = 3 \quad c^2 = 16$$

$$c = 4$$

$$\text{center} = (0, 0)$$

$$\text{foci} = (0, 4), (0, -4)$$

$$\text{Vertices} = (0, 5), (0, -5)$$

$$\text{CO vertices} = (3, 0), (-3, 0)$$

