

Name: _____
PCH

Date: _____
Ms. Loughran

Do Now:

Use the information provided to write the standard form equation of each ellipse.

- 7) Foci: $(0, 6\sqrt{2})$, $(0, -6\sqrt{2})$
Endpoints of major axis: $(0, 11)$, $(0, -11)$

Center: $(0, 0)$

vMA

$$a = 11$$

$$c = 6\sqrt{2}$$

$$\frac{x^2}{49} + \frac{y^2}{121} = 1$$

$$c^2 = a^2 - b^2$$

$$72 = 121 - b^2$$

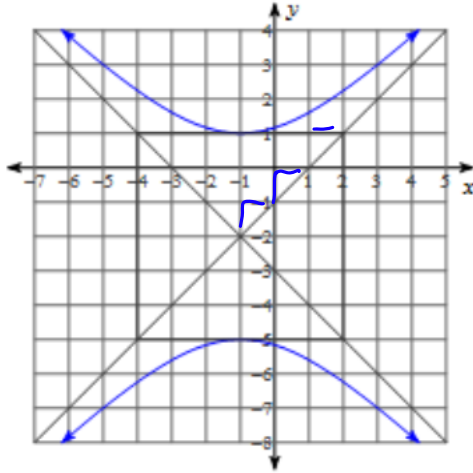
$$49 = b^2$$

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Do Now:

1. Write the equation, in standard form, of the hyperbola graphed below.



VTA
center: $(-1, -2)$

$$a=3$$

asymptotes: $\pm 1 \pm \frac{a}{b} = \pm 1$

$$b=3$$

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

2. Write the equation of the hyperbola, in standard form, that has the following characteristics:

Vertices: $(9, 12)$ and $(9, -18)$

Foci: $(9, -3 + \sqrt{229})$ and $(9, -3 - \sqrt{229})$

VTA
center: $(9, -3)$

$$a=15$$

$$c = \sqrt{229}$$

$$c^2 = a^2 + b^2$$

$$229 = 225 + b^2$$

$$4 = b^2$$

$$\frac{(y+3)^2}{225} - \frac{(x-9)^2}{4} = 1$$