

Name: _____
PCH: More Hyperbolas

Date: _____

Do Now:

Sketch the graph of each hyperbola. Plot and label the center, vertices, foci and asymptotes.
State the length of the transverse axis.

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

2. $\frac{(x+2)^2}{25} - \frac{(y-4)^2}{16} = 1$

3. $\frac{(y-1)^2}{4} - \frac{x^2}{100} = 1$

Classwork:

Sketch the graph of each hyperbola. Plot and label the center, vertices, foci and asymptotes. State the length of the transverse axis.

1. $(x-4)^2 - 9(y+5)^2 = 9$

2. $4x^2 - 9y^2 = 36$

3. $9(y+2)^2 - 4(x-1)^2 = 36$

4. $9x^2 + 36x - y^2 + 10y + 2 = 0$

5. $4x^2 - 5y^2 + 40x - 30y - 45 = 0$

6. $x^2 - 4y^2 - 2x + 16y = 20$

Write, in standard form, the equation of the hyperbola, having the given properties.

7. Center $(0, 0)$; foci $(\pm 6, 0)$; vertices $(\pm 4, 0)$

8. Center $(0, 0)$; foci $(0, \pm 4)$; vertices $(0, \pm 1)$

9. Center $(3, -1)$; foci $(-2, -1)$ and $(8, -1)$; vertices $(0, -1)$ and $(6, -1)$

10. Asymptotes $y = \pm \frac{5}{12}x$; foci $(\pm 13, 0)$

11. Asymptotes $y = \pm \frac{8}{15}x$; foci $(0, \pm 17)$