

Hyperbolas: Day 2 Homework

Date _____ Period _____

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

- 1) Vertices: $(-6, 3), (-14, 3)$
Foci: $(-10 + \sqrt{137}, 3), (-10 - \sqrt{137}, 3)$

- 2) Vertices: $(8, -1), (8, -11)$
Foci: $(8, -6 + \sqrt{61}), (8, -6 - \sqrt{61})$

- 3) Vertices: $(7, 0), (7, -18)$
Perimeter of Central Rectangle = 72

- 4) Vertices: $(-6, 19), (-6, -7)$
Perimeter of Central Rectangle = 68

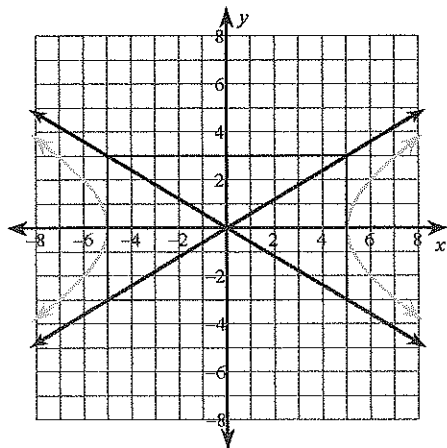
- 5) Vertices: $(-1, 4), (-1, -16)$
Asymptotes: $y = x - 5$
 $y = -x - 7$

- 6) Vertices: $(-5, 2 + \sqrt{95}), (-5, 2 - \sqrt{95})$
Asymptotes: $y = \frac{x\sqrt{437}}{23} + 2 + \frac{5\sqrt{437}}{23}$
 $y = -\frac{x\sqrt{437}}{23} + 2 - \frac{5\sqrt{437}}{23}$

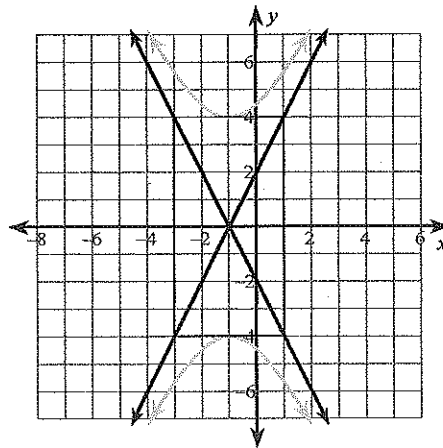
- 7) Foci: $(3, -3 + \sqrt{269}), (3, -3 - \sqrt{269})$
Asymptotes: $y = \frac{10}{13}x - \frac{69}{13}$
 $y = -\frac{10}{13}x - \frac{9}{13}$

- 8) Foci: $(-10, 5), (-10, -21)$
Asymptotes: $y = \frac{12}{5}x + 16$
 $y = -\frac{12}{5}x - 32$

9)



10)



Answers to Hyperbolas: Day 2 (ID: 1)

$$1) \frac{(x+10)^2}{16} - \frac{(y-3)^2}{121} = 1$$

$$4) \frac{(y-6)^2}{169} - \frac{(x+6)^2}{16} = 1$$

$$7) \frac{(y+3)^2}{100} - \frac{(x-3)^2}{169} = 1$$

$$10) \frac{y^2}{16} - \frac{(x+1)^2}{4} = 1$$

$$2) \frac{(y+6)^2}{25} - \frac{(x-8)^2}{36} = 1$$

$$5) \frac{(y+6)^2}{100} - \frac{(x+1)^2}{100} = 1$$

$$8) \frac{(y+8)^2}{144} - \frac{(x+10)^2}{25} = 1$$

$$3) \frac{(y+9)^2}{81} - \frac{(x-7)^2}{81} = 1$$

$$6) \frac{(y-2)^2}{95} - \frac{(x+5)^2}{115} = 1$$

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