Quiz Prep

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

1) Vertices: $(12, 5), (-14, 5)$
Endpoints of Conjugate Axis: $(-1, 9)$
$(-1, 1)$

2) Vertices: $(-5, 10), (-13, 10)$
Endpoints of Conjugate Axis: $(-9, 18)$
$(-9, 2)$

3) Vertices: $(0, 7), (0, -1)$
Foci: $(0, 8), (0, -2)$

4) Vertices: $(-7, 7), (-13, 7)$
Foci: $(-5, 7), (-15, 7)$

5) Vertices: $(13, 2), (3, 2)$
Distance from Center to Focus = 13

6) Vertices: $(-3, 18), (-3, -6)$
Distance from Center to Focus = 13

7) Vertices: $(11, -7), (-13, -7)$
Asymptotes: $y = \frac{1}{6}x - \frac{41}{6}$
$y = -\frac{1}{6}x - \frac{43}{6}$

8) Vertices: $(-9, 10), (-9, -12)$
Asymptotes: $y = \frac{11}{9}x + 10$
$y = -\frac{11}{9}x - 12$

9) Foci: $(-6, 14), (-6, 4)$

Asymptotes: $y = \frac{4}{3}x + 17$

$y = -\frac{4}{3}x + 1$

10) Foci: $(18, -9), (-8, -9)$

Asymptotes: $y = \frac{12}{5}x - 21$

$y = -\frac{12}{5}x + 3$

11) Foci: $(7, 8), (-19, 8)$

Conjugate Axis is 24 units long

12) Foci: $(4, 3), (4, -23)$

Conjugate Axis is 10 units long

13) Center at $(-8, 3)$

Transverse axis is vertical and 12 units long

Congujate axis is 8 units long

14) Center at $(4, 8)$

Transverse axis is horizontal and 20 units long

Congujate axis is 30 units long

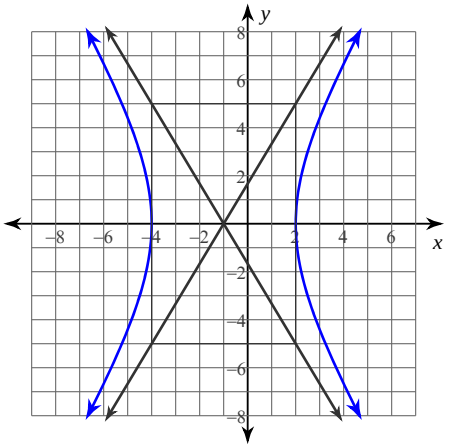
15) Center at $(-4, 6)$

Transverse axis is horizontal; central rectangle is 16 units wide and 12 units tall

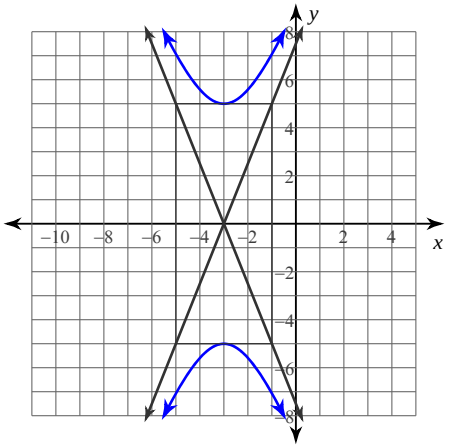
16) Center at $(9, -10)$

Transverse axis is vertical; central rectangle is 18 units wide and 28 units tall

17)



18)

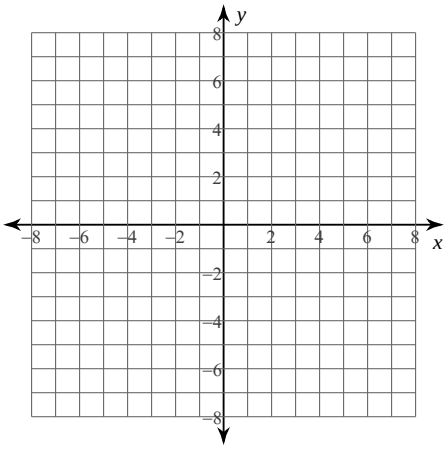


19) $-9x^2 + 4y^2 - 108x + 48y - 324 = 0$

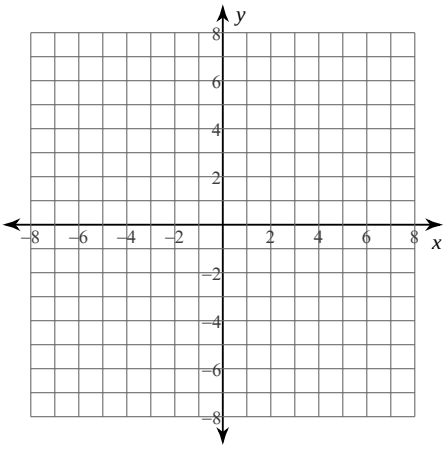
20) $x^2 - y^2 - 14y - 74 = 0$

Identify the vertices, foci, and asymptotes of each. Then sketch the graph.

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



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



Answers to Quiz Prep

1) $\frac{(x+1)^2}{169} - \frac{(y-5)^2}{16} = 1$

2) $\frac{(x+9)^2}{16} - \frac{(y-10)^2}{64} = 1$

3) $\frac{(y-3)^2}{16} - \frac{x^2}{9} = 1$

4) $\frac{(x+10)^2}{9} - \frac{(y-7)^2}{16} = 1$

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

6) $\frac{(y-6)^2}{144} - \frac{(x+3)^2}{25} = 1$

7) $\frac{(x+1)^2}{144} - \frac{(y+7)^2}{4} = 1$

8) $\frac{(y+1)^2}{121} - \frac{(x+9)^2}{81} = 1$

9) $\frac{(y-9)^2}{16} - \frac{(x+6)^2}{9} = 1$

10) $\frac{(x-5)^2}{25} - \frac{(y+9)^2}{144} = 1$

11) $\frac{(x+6)^2}{25} - \frac{(y-8)^2}{144} = 1$

12) $\frac{(y+10)^2}{144} - \frac{(x-4)^2}{25} = 1$

13) $\frac{(y-3)^2}{36} - \frac{(x+8)^2}{16} = 1$

14) $\frac{(x-4)^2}{100} - \frac{(y-8)^2}{225} = 1$

15) $\frac{(x+4)^2}{64} - \frac{(y-6)^2}{36} = 1$

16) $\frac{(y+10)^2}{196} - \frac{(x-9)^2}{81} = 1$

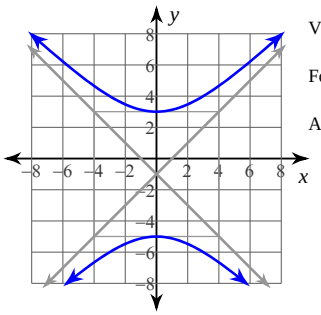
17) $\frac{(x+1)^2}{9} - \frac{y^2}{25} = 1$

18) $\frac{y^2}{25} - \frac{(x+3)^2}{4} = 1$

19) $\frac{(y+6)^2}{36} - \frac{(x+6)^2}{16} = 1$

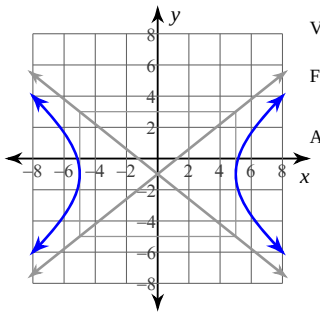
20) $\frac{x^2}{25} - \frac{(y+7)^2}{25} = 1$

21)



Vertices: $(0, 3)$
$(0, -5)$
Foci: $(0, -1 + 4\sqrt{2})$
$(0, -1 - 4\sqrt{2})$
Asym.: $y = x - 1$
$y = -x - 1$

22)



Vertices: $(5, -1)$
$(-5, -1)$
Foci: $(\sqrt{41}, -1)$
$(-\sqrt{41}, -1)$
Asym.: $y = \frac{4}{5}x - 1$
$y = -\frac{4}{5}x - 1$