Secondary Math 2 Honors Name_____

Unit 10 Conic Sections Review

Date_____ Period____

Identify the conic section that is represented by each equation.

1) $-9x^2 + y^2 - 108x - 18y - 324 = 0$

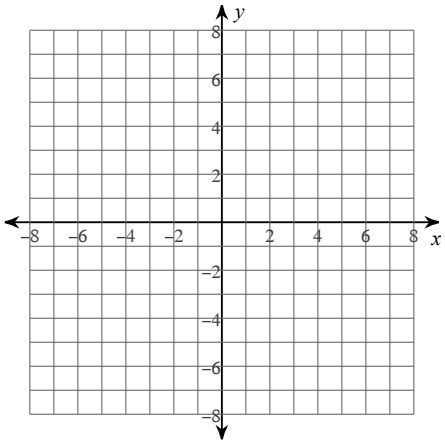
2) $2x^2 + y - 8 = 0$

3) $x^2 + y^2 - 20x + 16y + 155 = 0$

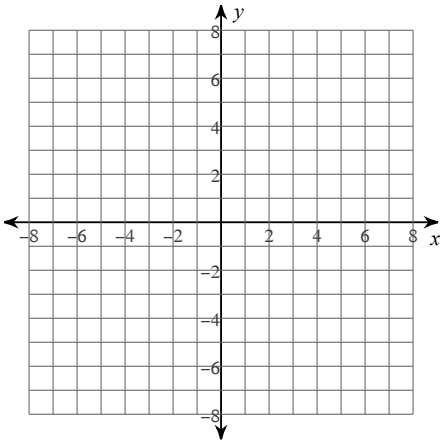
4) $49x^2 + 4y^2 - 294x + 40y + 345 = 0$

Graph each equation.

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



6) $(x + 1)^2 + (y + 1)^2 = 16$



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

7) Center: $(-6, -14)$
Radius: 2

8) Center: $(-14, -5)$
Radius: 3

9) Center: $(3, 14)$
Point on Circle: $(5, 14)$

10) Center: $(13, -11)$
Point on Circle: $(13, -13)$

11) $x^2 + y^2 + 24x + 12y + 131 = 0$

12) $x^2 + y^2 + 24x - 12y + 141 = 0$

Use the information provided to write the transformational form equation of each parabola.

13) Vertex: $(0, 5)$, Focus: $\left(0, \frac{61}{12}\right)$

14) Vertex: $(-5, 10)$, Focus: $\left(-5, \frac{79}{8}\right)$

15) Vertex: $(-1, 4)$, Directrix: $x = -\frac{9}{8}$

16) Vertex: $(-1, 9)$, Directrix: $x = 0$

17) Focus: $\left(9, \frac{39}{4}\right)$, Directrix: $y = \frac{17}{4}$

18) Focus: $\left(\frac{45}{44}, 3\right)$, Directrix: $x = \frac{43}{44}$

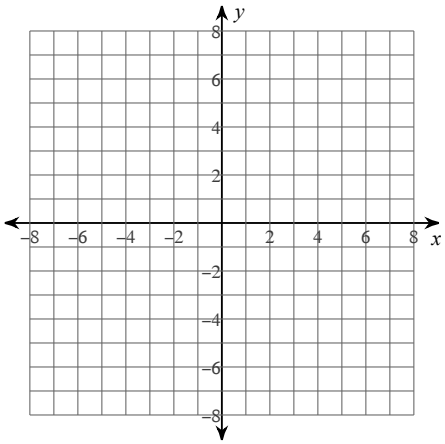
Use the information provided to write the vertex form equation of each parabola.

19) $-2y^2 + x - 20y - 58 = 0$

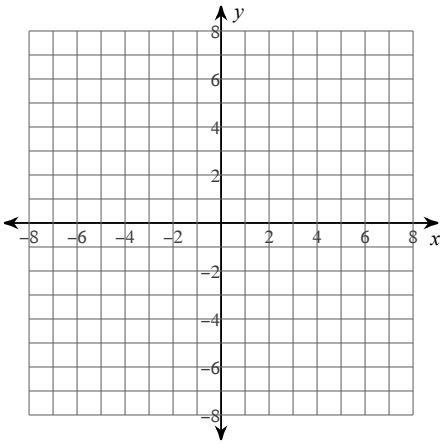
20) $-2x^2 + 32x + y - 123 = 0$

Graph each equation.

21) $\dfrac{(x+1)^2}{4} + \dfrac{y^2}{49} = 1$



22) $\dfrac{x^2}{25} + \dfrac{(y-3)^2}{9} = 1$



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

23) Center: $(7, -9)$
Height: 26
Width: 24

24) Center: $(0, -5)$
Height: 22
Width: 20

25) Center: $(6, 1)$
Vertex: $(1, 1)$
Focus: $(2, 1)$

26) Center: $(-7, 6)$
Vertex: $(-7, 1)$
Focus: $(-7, 2)$

27) Vertices: $(11, 9), (1, 9)$
Foci: $(9, 9), (3, 9)$

28) Vertices: $(11, 9), (1, 9)$
Foci: $(10, 9), (2, 9)$

29) $x^2 + 4y^2 - 2x - 72y + 289 = 0$

30) $x^2 + 16y^2 + 18x + 32y - 47 = 0$

Identify the center, vertices, foci, and asymptotes of each (I have a new video for simplifying asymptotes).

31) $\frac{(y-6)^2}{36} - \frac{(x-9)^2}{144} = 1$

32) $\frac{(x-6)^2}{144} - \frac{(y+8)^2}{9} = 1$

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

33) $-x^2 + y^2 - 14x - 18y - 68 = 0$

34) $-9x^2 + y^2 + 36x - 12y - 90 = 0$