14.6.D2 ~ Conics: Writing Equations

Past due on_____ Period____

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

1) Vertex: $(5, -2)$, Focus: $\left(5, -\frac{25}{12}\right)$

2) Vertex: $(4, 9)$, Directrix: $x = \frac{19}{4}$

3) Focus: $(3, -6)$, Directrix: $y = -8$

4) $2x^2 - 24x + y + 82 = 0$

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

5) Vertices: $(-1, 1)$, $(-11, 1)$
Co-vertices: $(-6, 4)$, $(-6, -2)$

6) Foci: $(7, 11)$, $(7, 5)$
Co-vertices: $(11, 8)$, $(3, 8)$

7) Vertices: $(6, 16)$, $(6, -4)$
Foci: $(6, 14)$, $(6, -2)$

8) Foci: $(10, -9)$, $(4, -9)$
Endpoints of major axis: $(12, -9)$, $(2, -9)$

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

9) Vertices: $(3, -7), (-7, -7)$
Conjugate Axis is 28 units long

10) Vertices: $(-8, -1), (-8, -17)$
Foci: $(-8, 1), (-8, -19)$

11) Vertices: $(4, 14), (4, -4)$
Distance from Center to Focus = $\sqrt{106}$

12) Foci: $(11, 7), (1, 7)$
Conjugate Axis is 8 units long

Identify the conic section. Then write its standard form equation.

13) $5x^2 + y^2 + 70x + 20y + 145 = 0$

14) $-4x^2 - 80x + y - 403 = 0$

15) $x^2 + y^2 - 28x - 20y + 293 = 0$

16) $x^2 - 9y^2 + 12x + 72y - 189 = 0$

Answers to 14.6.D2 ~ Conics: Writing Equations (ID: 1)

1) $-\frac{1}{3}(y+2)=(x-5)^2$

2) $-3(x-4)=(y-9)^2$

3) $4(y+7)=(x-3)^2$

4) $-\frac{1}{2}(y+10)=(x-6)^2$

5) $\frac{(x+6)^2}{25}+\frac{(y-1)^2}{9}=1$

6) $\frac{(x-7)^2}{16}+\frac{(y-8)^2}{25}=1$

7) $\frac{(x-6)^2}{36}+\frac{(y-6)^2}{100}=1$

8) $\frac{(x-7)^2}{25}+\frac{(y+9)^2}{16}=1$

9) $\frac{(x+2)^2}{25}-\frac{(y+7)^2}{196}=1$

10) $\frac{(y+9)^2}{64}-\frac{(x+8)^2}{36}=1$

11) $\frac{(y-5)^2}{81}-\frac{(x-4)^2}{25}=1$

12) $\frac{(x-6)^2}{9}-\frac{(y-7)^2}{16}=1$

13) $\frac{(x+7)^2}{40}+\frac{(y+10)^2}{200}=1$

14) $\frac{1}{4}(y-3)=(x+10)^2$

15) $(x-14)^2+(y-10)^2=3$

16) $\frac{(x+6)^2}{81}-\frac{(y-4)^2}{9}=1$