Honors Pre-Calculus Name_____ ID: 1

Unit 6 Quiz 1 Conics - Circles, Parabolas

Date_____ Period____

Identify the vertex, focus, and directrix of each. Then sketch the graph.

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

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

3) $-\frac{8}{3}(x-4)=(y+2)^2$

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

5) $y^2+x-6y+7=0$

6) $-y^2+x+6y-5=0$

7) $-2x^2+16x+y-31=0$

8) $5x^2+10x+7y-30=0$

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

9) Vertex at origin, Focus: $\left(0, \frac{1}{4}\right)$

10) Vertex at origin, Directrix: $x=-\frac{1}{8}$

11) Vertex: $(7,-3)$, Focus: $\left(7, -\frac{25}{8}\right)$

12) Vertex: $(0,-2)$, Directrix: $y=-\frac{65}{32}$

13) Focus: (2,2), Directrix: x= -4

14) Focus: (0,0), Directrix: y= -8

Identify the center and radius of each circle. Then sketch the graph.

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

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

17) $(x+2)^2+(y-1)^2=1$

18) $x^2+y^2=5$

19) $4x^2+4y^2+4x-16y-31=0$

20) $x^2+y^2+4x-6y+4=0$

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

21) Center: $(1,-15)$
Radius: 4

22) Center: $(10,-1)$
Radius: $\sqrt{59}$

Classify each conic section and write its equation in standard form.

23) $3x^2-36x+7y+115=0$

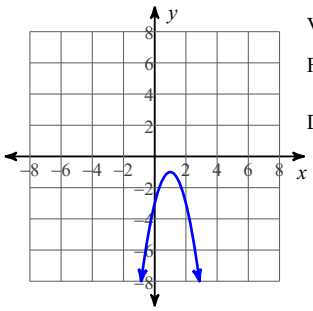
24) $x^2+y^2+2x-8y+14=0$

25) $y^2+4x+6y-11=0$

26) $x^2+y^2-6y+8=0$

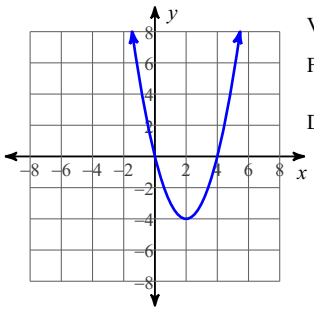
Answers to Unit 6 Quiz 1 Conics - Circles, Parabolas (ID: 1)

1)



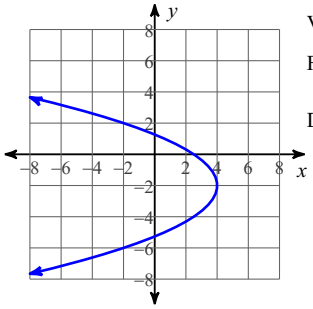
Vertex: $(1, -1)$
Focus: $\left(1, -\frac{9}{8}\right)$
Directrix: $y = -\frac{7}{8}$

2)



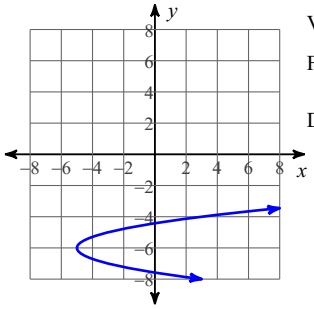
Vertex: $(2, -4)$
Focus: $\left(2, -\frac{15}{4}\right)$
Directrix: $y = -\frac{17}{4}$

3)



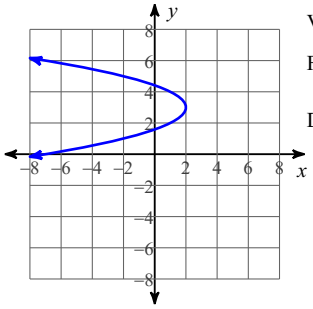
Vertex: $(4, -2)$
Focus: $\left(\frac{10}{3}, -2\right)$
Directrix: $x = \frac{14}{3}$

4)



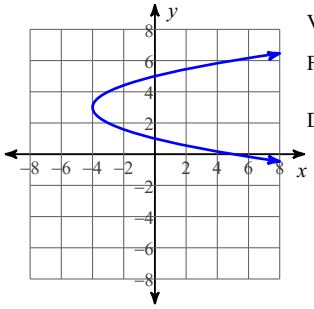
Vertex: $(-5, -6)$
Focus: $\left(-\frac{39}{8}, -6\right)$
Directrix: $x = -\frac{41}{8}$

5)



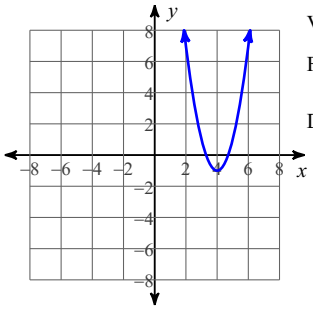
Vertex: $(2, 3)$
Focus: $\left(\frac{7}{4}, 3\right)$
Directrix: $x = \frac{9}{4}$

6)



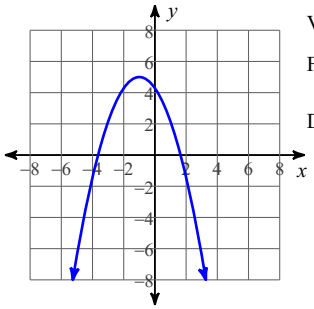
Vertex: $(-4, 3)$
Focus: $\left(-\frac{15}{4}, 3\right)$
Directrix: $x = -\frac{17}{4}$

7)



Vertex: $(4, -1)$
Focus: $\left(4, -\frac{7}{8}\right)$
Directrix: $y = -\frac{9}{8}$

8)



Vertex: $(-1, 5)$
Focus: $\left(-1, \frac{93}{20}\right)$
Directrix: $y = \frac{107}{20}$

9) $x^2 = y$

10) $y^2 = \frac{1}{2}x$

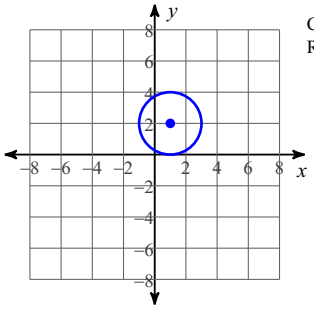
11) $(x-7)^2 = -\frac{1}{2}(y+3)$

12) $x^2 = \frac{1}{8}(y+2)$

13) $(y-2)^2 = 12(x+1)$

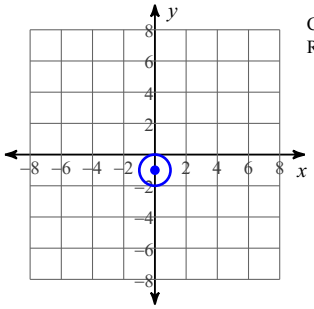
14) $x^2 = 16(y+4)$

15)



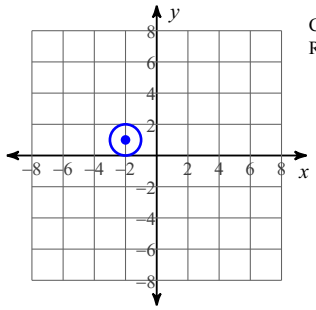
Center: $(1, 2)$
Radius: 2

16)



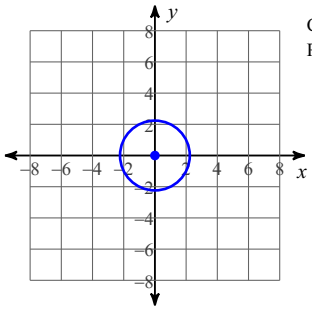
Center: $(0, -1)$
Radius: 1

17)



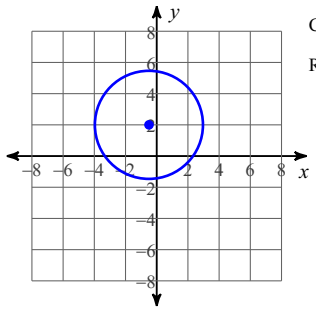
Center: $(-2, 1)$
Radius: 1

18)



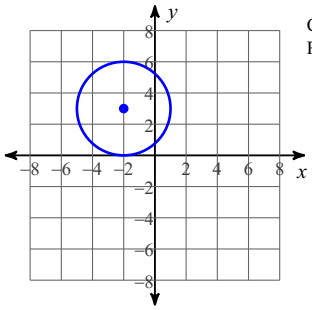
Center: $(0, 0)$
Radius: $\sqrt{5}$

19)



Center: $\left(-\frac{1}{2}, 2\right)$
Radius: $2\sqrt{3}$

20)



Center: $(-2, 3)$
Radius: 3

21) $(x-1)^2+(y+15)^2=16$

22) $(x-10)^2+(y+1)^2=59$

23) Parabola
$(x-6)^2=-\frac{7}{3}(y+1)$

24) Circle
$(x+1)^2+(y-4)^2=3$

25) Parabola
$(y+3)^2=-4(x-5)$

26) Circle
$x^2+(y-3)^2=1$