

M317 – Algebra 2
Unit 10A - Conics
Parabola Worksheet 2

Name _____

Teacher _____

Write each equation in standard form and state the vertex and focus.

1) $y = x^2 - 4x + 7$

vertex: _____

focus: _____

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

vertex: _____

focus: _____

3) $x = y^2 - 10y + 20$

vertex: _____

focus: _____

4) $y = x^2 - 6x + 1$

vertex: _____

focus: _____

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

vertex: _____

focus: _____

6) $x = 2y^2 - 4y$

vertex: _____

focus: _____

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

vertex: _____

focus: _____

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

vertex: _____

focus: _____

Write an equation for each parabola described below. (Standard form)

9) focus (3,5) and directrix $y=1$

10) vertex (5,1) and focus $(4\frac{11}{12}, 1)$

11) vertex (3,2) and focus $(3\frac{1}{4}, 2)$

12) focus (5,-1) and directrix $x=3$

13) focus (4,-4) and directrix $y = -6$

14) vertex (2,-3) and focus (0,-3)

15) focus $(-3, 3\frac{3}{4})$ and directrix $y=4\frac{1}{4}$

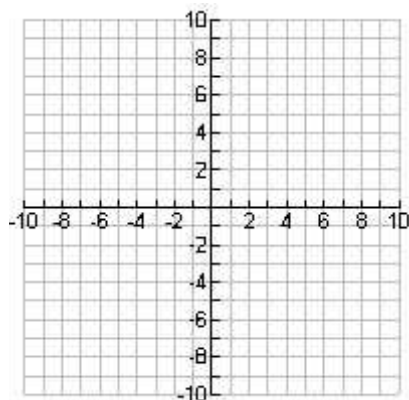
16) vertex (-2,1) and directrix $x=-3$

17) vertex (3,4) and directrix is the x-axis

18) vertex (-1,4) , axis of symmetry $x=-1$ and passes through the point (2,1)

Rewrite each parabola into standard form if it is needed. Find the vertex, focus, directrix, and axis of symmetry, for each parabola and then graph each one. Be sure to use a test point for accuracy.

19) $y = \frac{1}{8}(x - 4)^2 + 5$



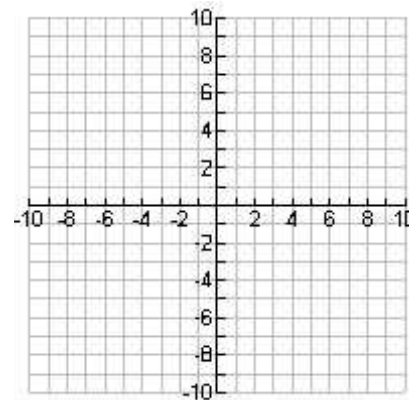
Vertex: _____

Focus: _____

Directrix: _____

Axis of Sym: _____

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



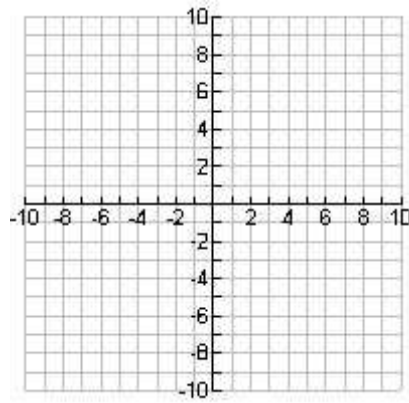
Vertex: _____

Focus: _____

Directrix: _____

Axis of Sym: _____

21) $x = y^2 - 4y + 7$



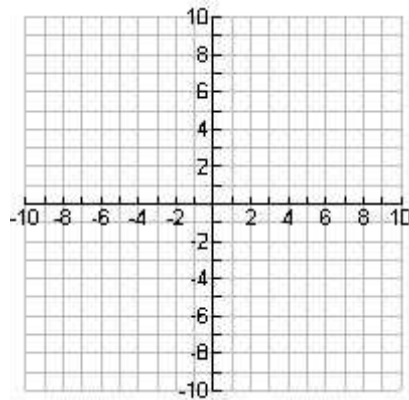
Vertex: _____

Focus: _____

Directrix: _____

Axis of
Sym: _____

22) $y = x^2 - 10x + 26$



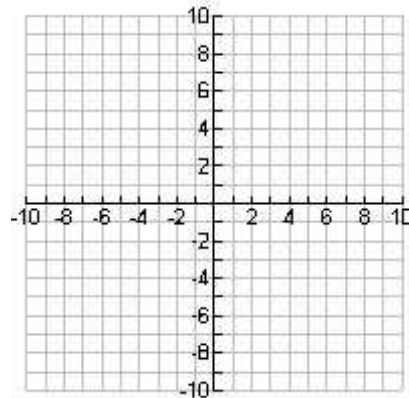
Vertex: _____

Focus: _____

Directrix: _____

Axis of
Sym: _____

23) $x = 2y^2 - 12y + 19$



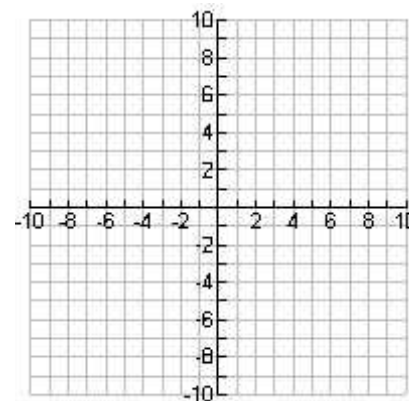
Vertex: _____

Focus: _____

Directrix: _____

Axis of
Sym: _____

24) $y = -x^2 - 6x - 5$



Vertex: _____

Focus: _____

Directrix: _____

Axis of
Sym: _____