

WS #7 KEY

Monday, April 27, 2015 7:41 PM

A series of horizontal blue lines for writing, with a vertical red margin line on the left side.

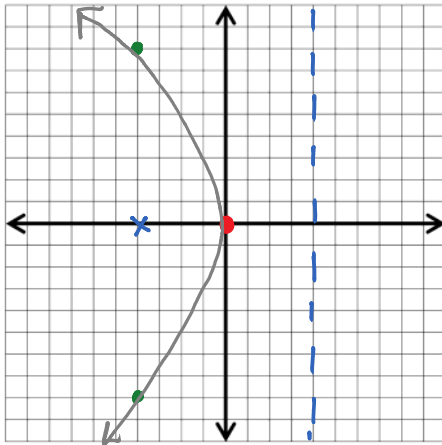
Directions: Write an equation in standard form for each Parabola.

1. Vertex $(0, 0)$; focus $(-4, 0)$

$$p = 4$$

$$4(4) = 16$$

$$y^2 = -16x$$

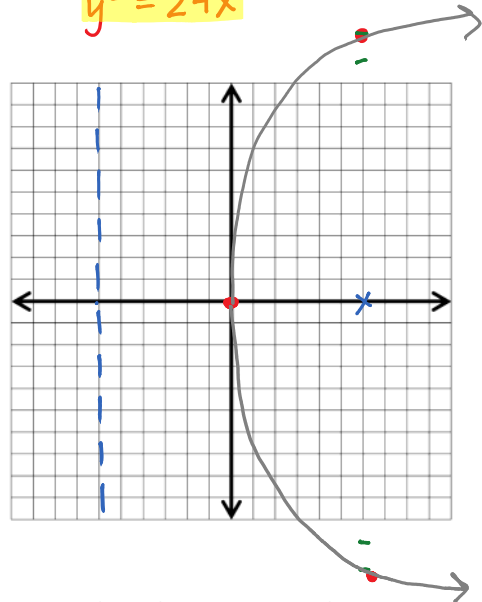


2. Vertex $(0, 0)$; directrix $x = -6$

$$p = 6$$

$$4(6) = 24$$

$$y^2 = 24x$$

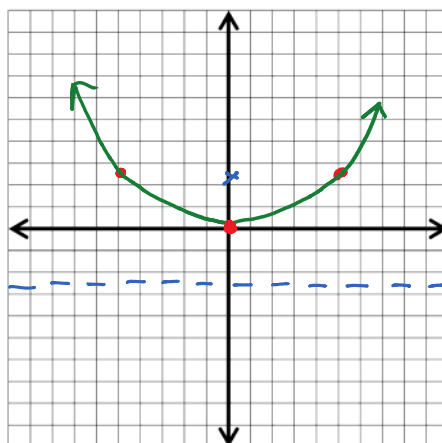


3. Vertex $(0, 0)$; opens up, focal width = 10

$$4p = 10$$

$$p = \frac{5}{2} = 2.5$$

$$x^2 = 10y$$

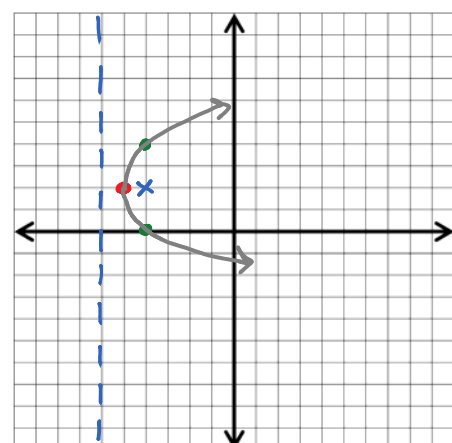


4. Focus $(-4, 2)$; vertex $(-5, 2)$

$$p = 1$$

$$4(1) = 4$$

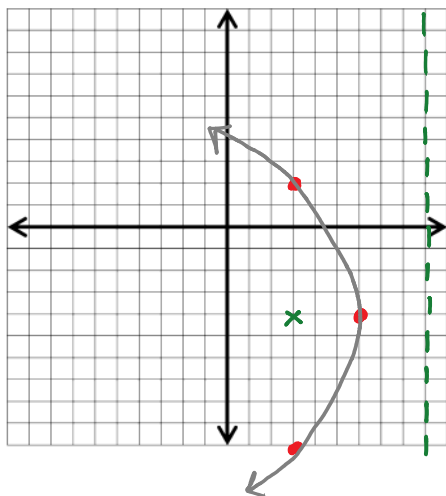
$$(y - 2)^2 = 4(x + 5)$$



5. Focus $(3, -4)$ and directrix $x=9$

Vertex: $(6, -4)$ $p=3$
 $4(3)=12$

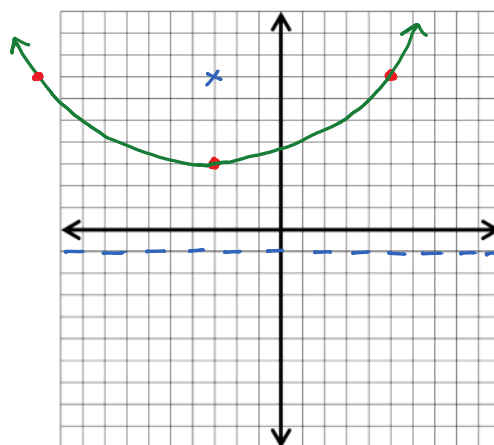
$$(y+4)^2 = -12(x-6)$$



6. Vertex $(-3, 3)$, opens upward, and focal width 16

$4p=16$
 $p=4$

$$(x+3)^2 = 16(y-3)$$



(#7-8) Convert the following equations into standard form by completing the square. Then, state the vertex, directrix and focus point.

7. $3x^2 - 6x = 6y - 15$

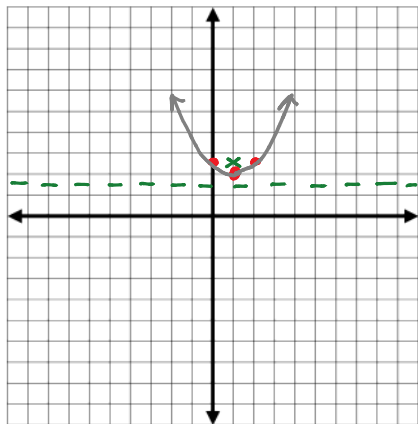
$$3(x^2 - 2x + \underline{1}) = 6y - 15 + \underline{3}$$

$$3(x-1)^2 = 6y - 12$$

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

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

up
 vertex: $(1, 2)$
 $4p=2$
 $p=1/2$



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

$$x + 6 + \underline{16} = (y^2 + 8y + \underline{16})$$

$$x + 22 = (y + 4)^2$$

↓

$$(y+4)^2 = 1(x+22)$$

Right
 vertex: $(-22, -4)$
 $4p=1$
 $p=1/4$

