

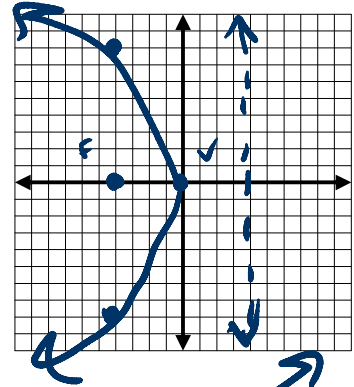
Pre-Calc
HW Day 2 – Parabolas

Name DiMarco

Write an equation in standard form for each Parabola.

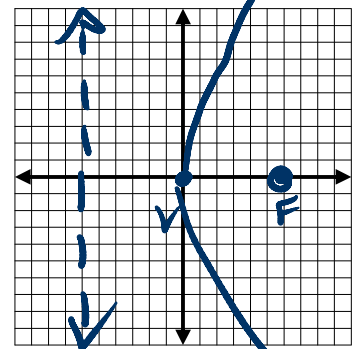
- a) Vertex $(0,0)$; focus $(-4,0)$

$p = 4$
 $4p = 16$
 opens left $-y^2$
 $y^2 = -16x$



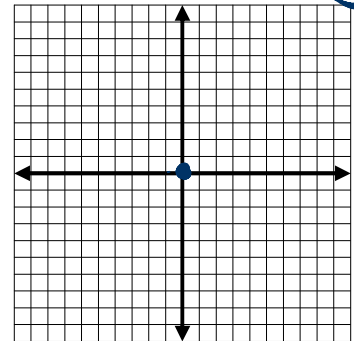
- b) Vertex $(0,0)$; directrix $x = -6$

$p = 6$
 $4p = 24$
 opens right y^2
 $y^2 = 24x$



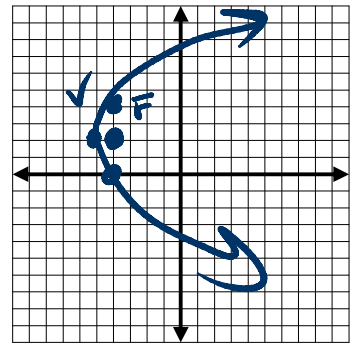
- c) Vertex $(0,0)$; opens up, focal width = 10

$fw = 4p = 10$
 $p = \frac{5}{2}$
 opens up x^2
 $x^2 = 10y$



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

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



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

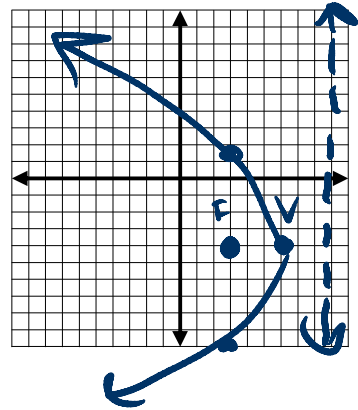
vertex (6, -4)

$$p = 3$$

$$4p = 12$$

opens left
-y²

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



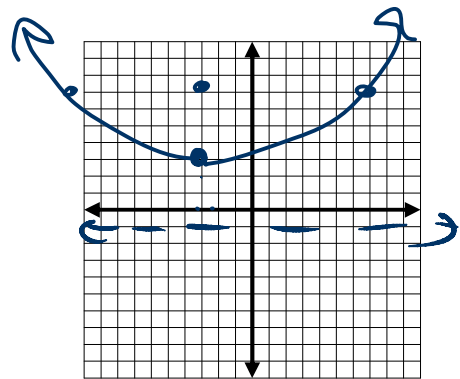
f) Vertex ^{hk} (-3, 3), opens upward, and focal width 16

opens up x²

$$4p = 16$$

$$p = 4$$

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



g) Put the equation into standard form: $y = x^2 + 8x - 6$

$$y + 6 = x^2 + 8x + 16$$

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

h) Put the equation into standard form: $x = -4y^2 - 16y - 9$

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

$$\frac{-16}{-4}$$

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

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