

CCGPS Analytic Geometry

Parabola Practice Quiz

Graph the equation and identify the important characteristics. $(x - h)^2 = 4p(y - k)$

$(y - k)^2 = 4p(x - h)$

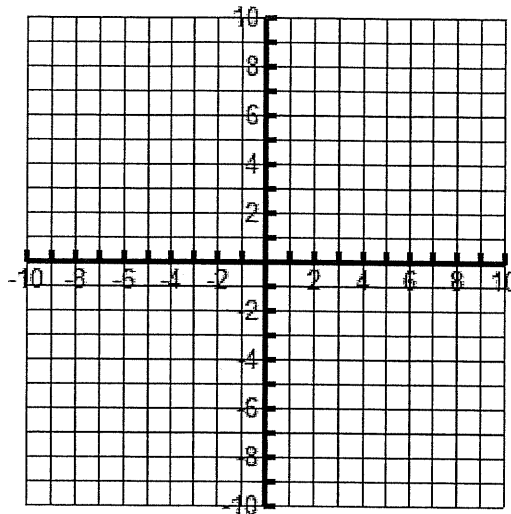
1. $(y + 1)^2 = 16x$

Opens: _____

Vertex: _____ $p =$ _____

Focus: _____ Directrix: _____

Focal Width: _____



Write the equation in standard form. Graph the equation and identify the important characteristics.

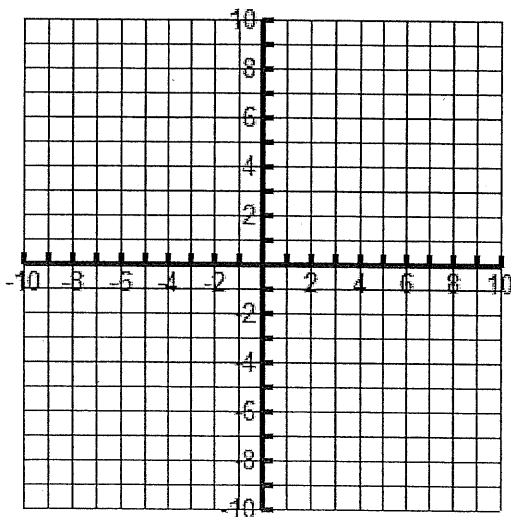
2. $4x + y^2 - 8y = -4$

Opens: _____ Equation: _____

Vertex: _____ $p =$ _____

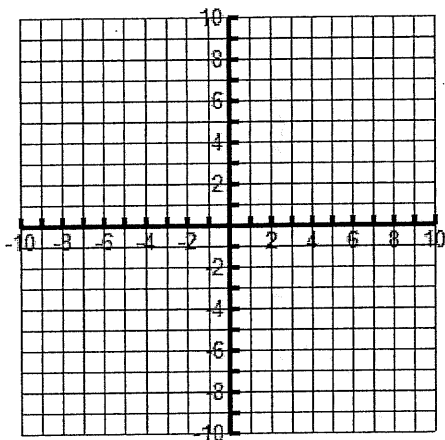
Focus: _____ Directrix: _____

Focal Width: _____



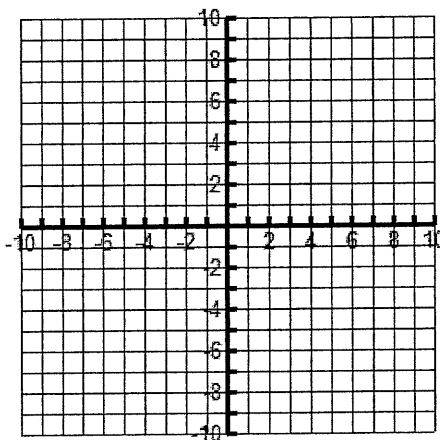
Use the information to write the standard form of the parabola and graph.

3. Vertex: (5, 2)
Focus: (1, 2)



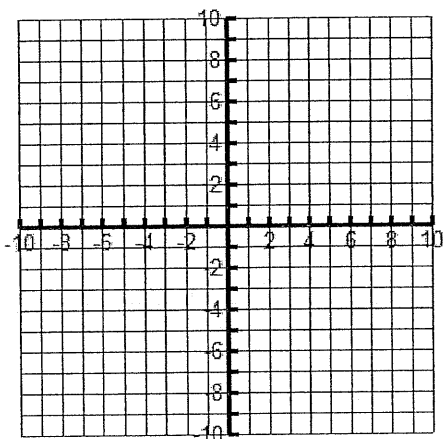
Standard Form:

4. Directrix: $y = 7$
Focus: (-4, 1)



Standard Form:

5. Parabola passes through the point (-5, -6) and has a vertex at (-1, -4) and opens left or right



Standard Form:

CCGPS Analytic Geometry

Parabola Practice Quiz

Graph the equation and identify the important characteristics. $(x-h)^2 = 4p(y-k)$

up/down

right/left

$(y-k)^2 = 4p(x-h)$

Key

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

$(y+1)^2 = 16(x-0)$

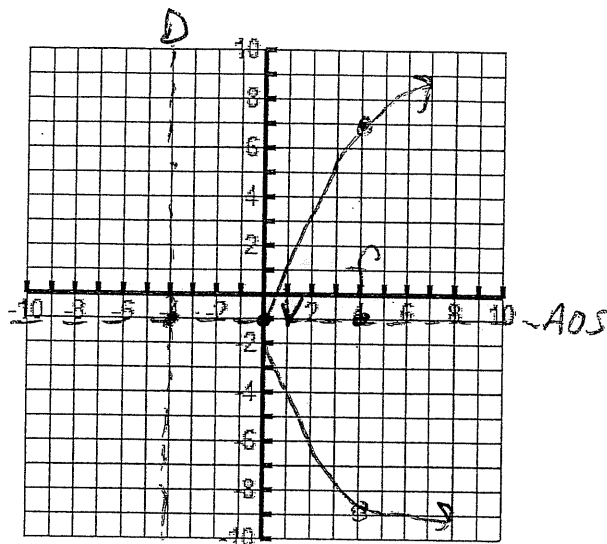
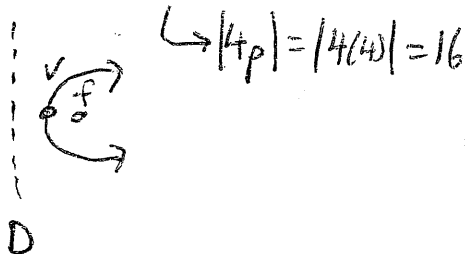
$4p = 16$
 $p = 4$

Opens: right

Vertex: $(0, -1)$ $p =$ 4

Focus: $(4, -1)$ Directrix: $x = -4$

Focal Width: 16 AOS: $y = -1$



Write the equation in standard form. Graph the equation and identify the important characteristics.

2. $4x + y^2 - 8y = -4$

$y^2 - 8y + 16 = -4x - 4 + 16$

$(\frac{b}{2})^2 = (\frac{-8}{2})^2 = (-4)^2 = 16$ $(y-4)^2 = -4x + 12$

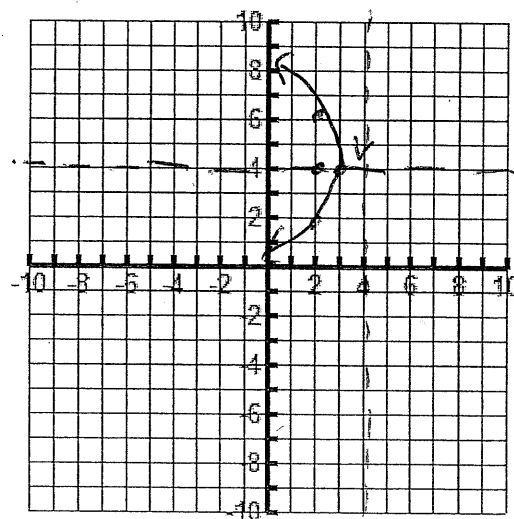
Opens: left Equation: $(y-4)^2 = -4(x-3)$

Vertex: $(3, 4)$ $p =$ -1

Focus: $(2, 4)$ Directrix: $x = 4$

Focal Width: 4 AOS: $y = 4$

opens left



Use the information to write the standard form of the parabola and graph.

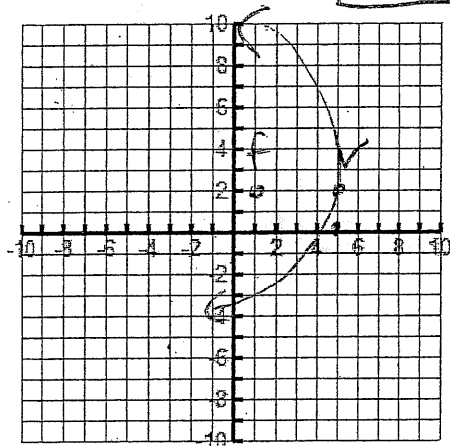
3. Vertex: $(5, 2)$
Focus: $(1, 2)$

$p = -4$

opens left

$$(y-k)^2 = 4p(x-h)$$

$$(y-2)^2 = -16(x-5)$$



Standard Form:

$$(y-2)^2 = -16(x-5)$$

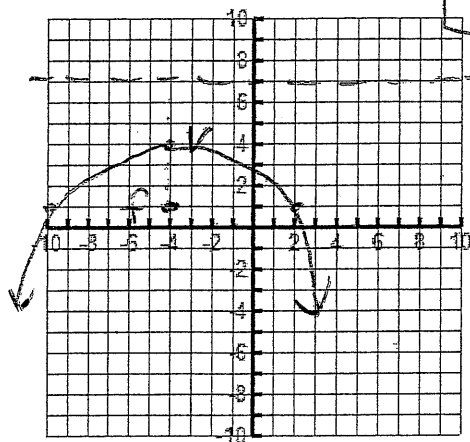
4. Directrix: $y = 7$
Focus: $(-4, 1)$

Vertex $(-4, 4)$

$p = -3$

$$(x-h)^2 = 4p(y-k)$$

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

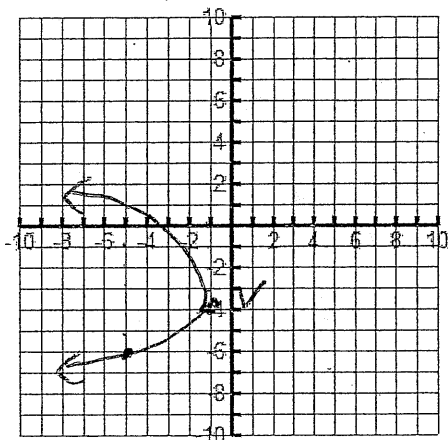


Standard Form: $(x+4)^2 = -12(y-4)$

5. Parabola passes through the point $(-5, -6)$ and has a vertex at $(-1, -4)$ and opens left or right

x y

h k



$$(y-k)^2 = 4p(x-h)$$

$$(-6+4)^2 = 4p(-5+1)$$

$$(-2)^2 = 4p(-4)$$

$$4 = -16p$$

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

$$\underline{\underline{\frac{-1}{4} = p}}$$

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

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

Standard Form:

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