

Key

4

Learning Center 2 : Parabolas

Test Review in Conics

Name: _____

1. Write the standard form of the parabola with its vertex at the origin and focus at $(0, 4)$.

vertex: $(0, 0)$ Focus: $(0, p) = (0, 4)$

Equation: $x^2 = 4py$ $p = 4$ $x^2 = 4 \cdot 4 \cdot y$

$x^2 = 16y$

2. What is the standard form of the equation of the parabola with directrix $y = 4$ and vertex at $(0, 0)$?

$y = -p$, $y = 4$ so, $p = -4$

Eq: $x^2 = 4py$; $x^2 = 4 \cdot -4y$

$x^2 = -16y$

3. Write the equation of the conic and graph it

- a. Parabola with vertex at $(0, 0)$ and

Focus at $(0, -4)$

$p = -4$

$x^2 = 4py$

$x^2 = 4 \cdot -4 \cdot y$

$x^2 = -16y$

- b. Parabola with vertex at $(0, 0)$ and

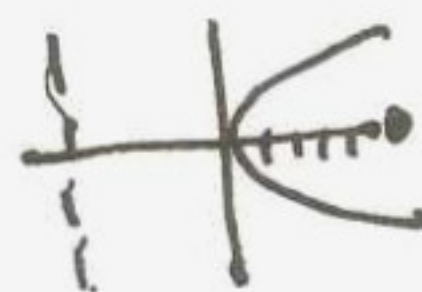
Directrix $x = -5$

$p = 5$

$y^2 = 4px$

$y^2 = 4 \cdot 5 \cdot x$

$y^2 = 20x$



4. Identify the focus and directrix of each parabola and graph.

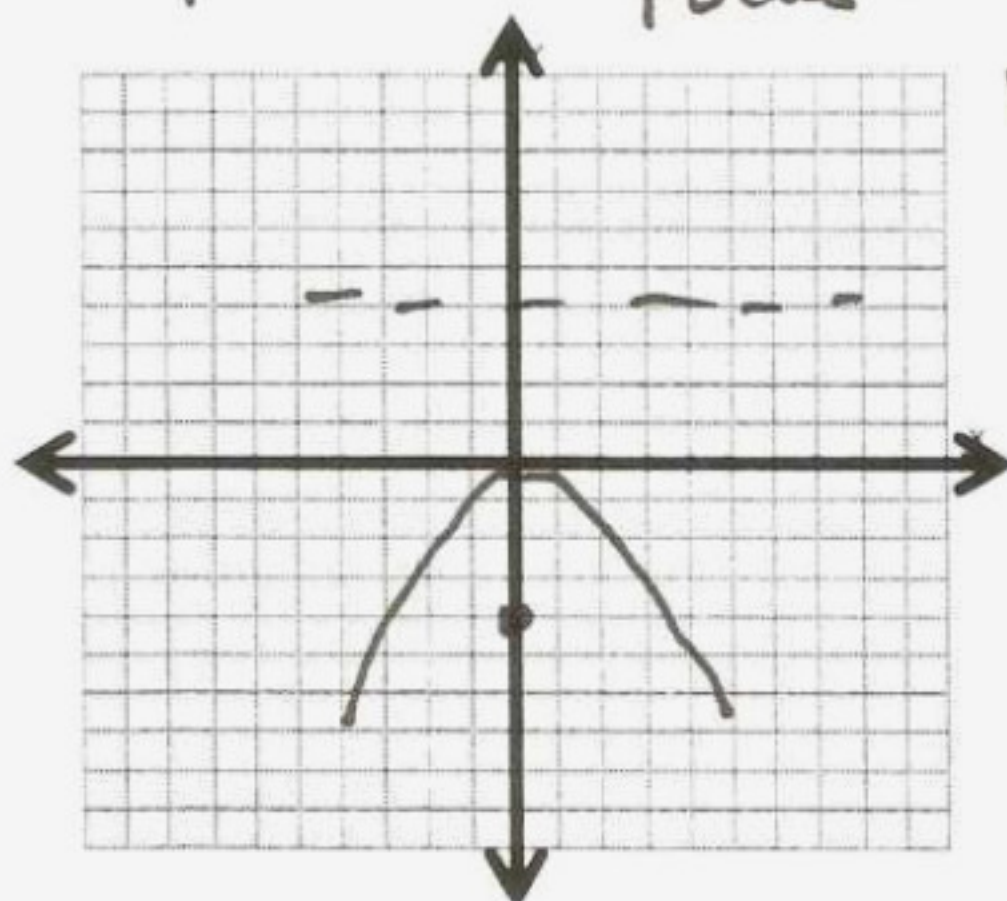
a. $x^2 = -16y$

$x^2 = 4py$

$4p = -16$
 $p = -4$

Focus: $(0, -4)$

Directrix: $y = 4$



b. $x = \frac{1}{8}y^2$

$y^2 = 8x$

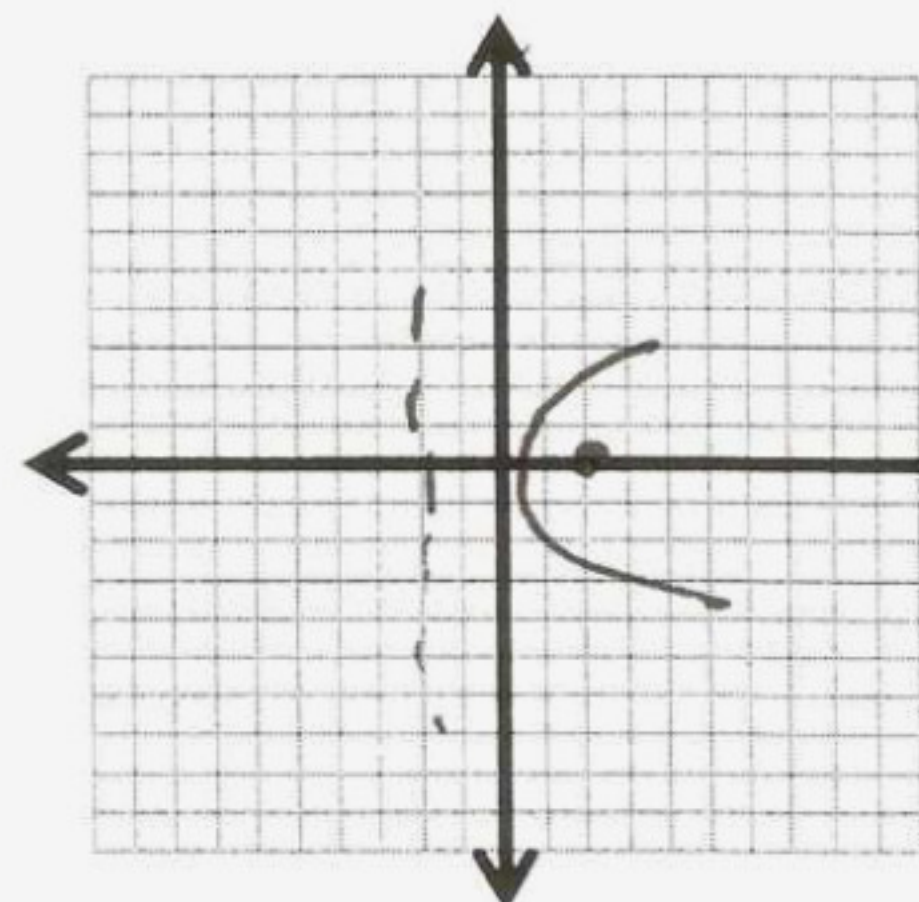
$4p = 8$

$p = 2$

Focus: $(2, 0)$

Directrix: $x = -2$

$x = -2$



5. Tell whether the parabola opens up, down, left, or right.

a. $x^2 = 2y$

up

b. $y^2 = 8x$

Right

c. $y^2 = -4x$

Left

d. $x^2 = -6y$

down