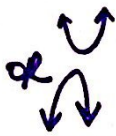


#14, 18, 21, 10, 12

Name:	Date:
Topic:	Class:

Main Ideas/Questions	Notes/Examples
----------------------	----------------

Writing Equations of
PARABOLAS



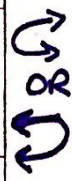
Standard Form for the Equation of a Parabola at Vertex (h, k) :

VERTICAL PARABOLA

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

HORIZONTAL PARABOLA

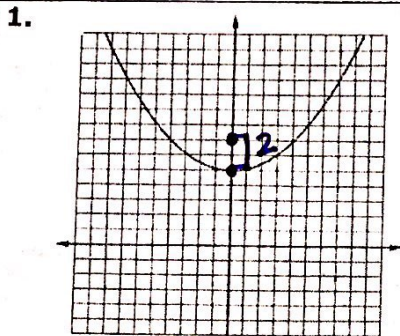
$$(y-k)^2 = 4p(x-h)$$



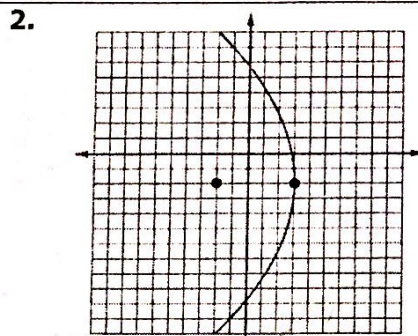
$\pm p$ is the distance from the vertex to the focus and the directrix.

SET I:

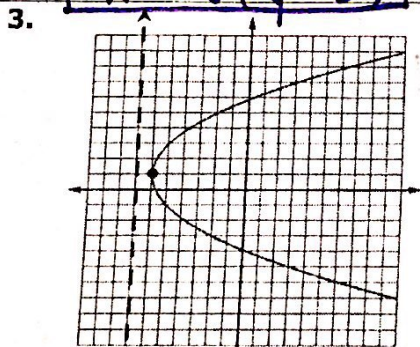
Given a Graph



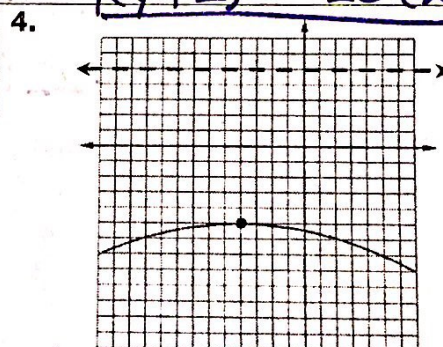
V: $(0, 5)$ $p = 2$
 $(x-0)^2 = 4(2)(y-5)$
 $x^2 = 8(y-5)$



V: $(+3, -2)$ $p = -5$
 $(y+2)^2 = 4(-5)(x-3)$
 $(y+2)^2 = -20(x-3)$



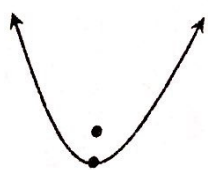
V: $(-6, 1)$ $p = 1$
 $(y-1)^2 = 4(x+6)$



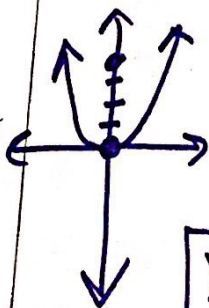
V: $(-4, -5)$ $p = -10$
 $(x+4)^2 = -40(y+5)$

SET 2:

Given the
Vertex and Focus



5. Vertex: $(0, 0)$; Focus: $(0, 4)$



$p = 4$

$x^2 = 16y$

6. Vertex: $(0, 0)$; Focus: $(\frac{5}{2}, 0)$

	<p>7. Vertex: $(-7, 1)$; Focus: $(-7, \frac{3}{4})$</p> <p>$p = \frac{1}{4}$</p> <p>$(x+7)^2 = 4(\frac{-1}{4})(y-1)$</p> <p>$(x+7)^2 = -1(y-1)$</p>	<p>8. Vertex: $(2, -6)$; Focus: $(-3, -6)$</p>
<p>SET 3: Given the Vertex and Directrix</p>	<p>9. Vertex: $(0, 0)$; Directrix: $y = 8$</p>	<p>10. Vertex: $(0, 0)$; Directrix: $x = -2$</p>
	<p>11. Vertex: $(7, 4)$; Directrix: $x = \frac{3}{2} = 1.5$</p> <p>$p = 5.5$</p> <p>$(y-4)^2 = 4(5.5)(x-7)$</p> <p>$(y-4)^2 = 22(x-7)$</p>	<p>12. Vertex: $(-1, -1)$; Directrix: $y = -8$</p>
<p>SET 4: Given the Focus and Directrix</p>	<p>13. Focus: $(3, 0)$; Directrix: $x = -3$</p>	<p>14. Focus: $(7, -2)$; Directrix: $y = -4$</p>
	<p>15. Focus: $(-8, 5)$; Directrix: $x = 4$</p> <p>$V: (-2, 5)$ $p = 6$</p> <p>$(y-5)^2 = 4(6)(x+2)$</p> <p>$(y-5)^2 = -24(x+2)$</p>	<p>16. Focus: $(-4, -\frac{3}{2})$; Directrix: $y = -\frac{1}{2}$</p>