

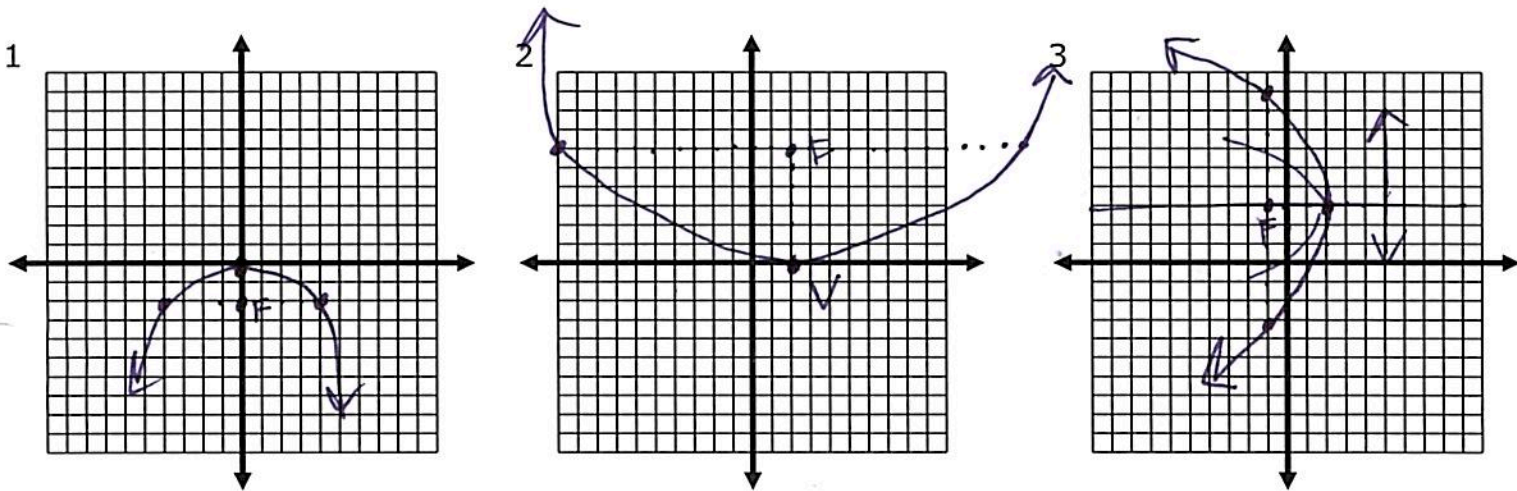
EVALUATE PARABOLAS WORKSHEET

Name Benton

Problems:

1. $x^2 = -8y$	2. $(x-2)^2 = 24y$	3. $(y-3)^2 = -12(x-2)$
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	Direction	Vertex	AOS	Domain	Range	p	Focus	Directrix
1	↓	(0,0)	$x=0$	\mathbb{R}	$y \leq 0$	-2	(0,-2)	$y=2$
2	↑	(2,0)	$x=2$	\mathbb{R}	$y \geq 0$	6	(2,6)	$y=-6$
3	←	(2,3)	$y=3$	$x \leq 2$	\mathbb{R}	-3	(-1,3)	$x=5$



4. You have created a new laser by taking the equation $x^2 = y$ moving it right 4, down 2 and placing the focus 3 units from the vertex. What is the equation of your laser?

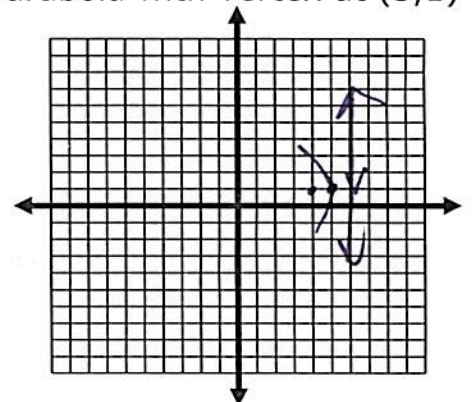
$p=3$

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

5. Steve Jobs has asked you to do some consulting on a secret project for Apple. The next ipod, the ipod wireless needs to have a parabola inside of it to communicate with the Apple satellite system. Mr. Jobs needs you to write the equation of a parabola with vertex at (5,1) and directrix $x = 6$.

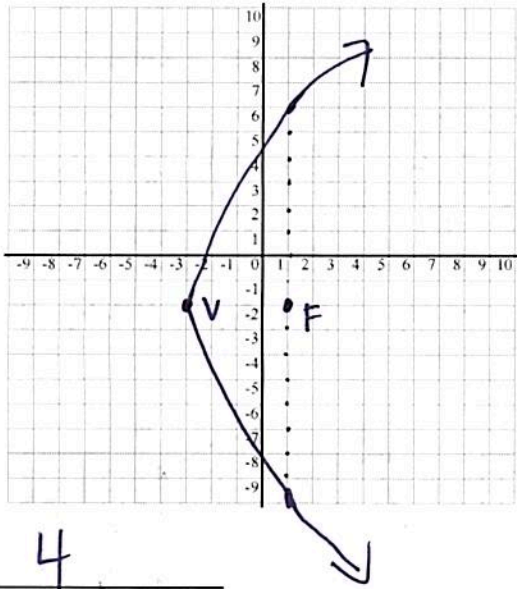
←

$$(y-1)^2 = -4(x-5)$$



Given the following information, write the equation of the parabola

6. Vertex $(-3, -2)$ Focus $(1, -2)$

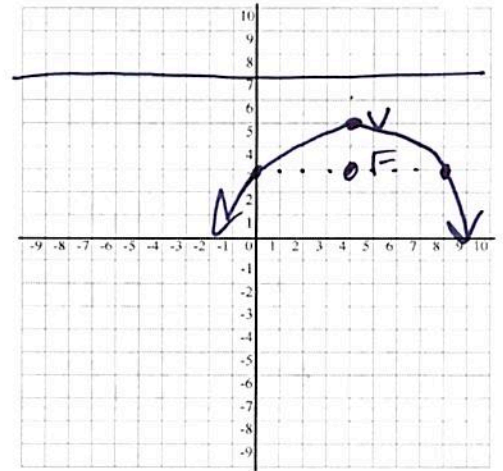


$p =$ 4

Equation: $(y+2)^2 = 16(x+3)$

8. Focus $(4, 3)$ Directrix : $y = 7$

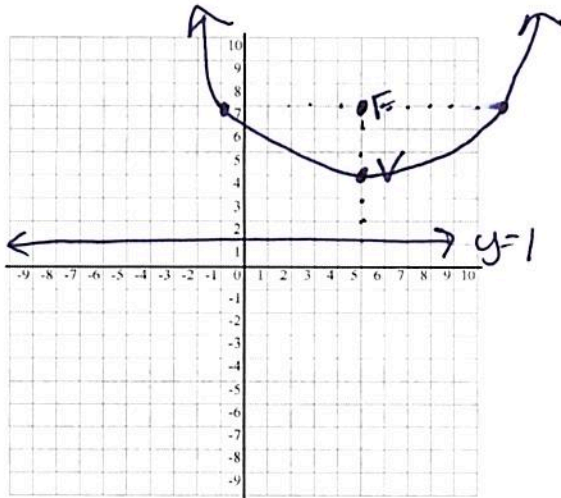
Vertex
 $(4, 5)$



$p =$ -2

Equation: $(x-4)^2 = -8(y-5)$

7. Vertex $(5, 4)$ Directrix : $y = 1$



$p =$ 3

Equation: $(x-5)^2 = 12(y-4)$

Parabola Conics Form:
Vertical: $(x-h)^2 = 4p(y-k)$
Horizontal: $(y-k)^2 = 4p(x-h)$

14.3 Parabola Day 2 Notes

Parabola Conics Form:

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

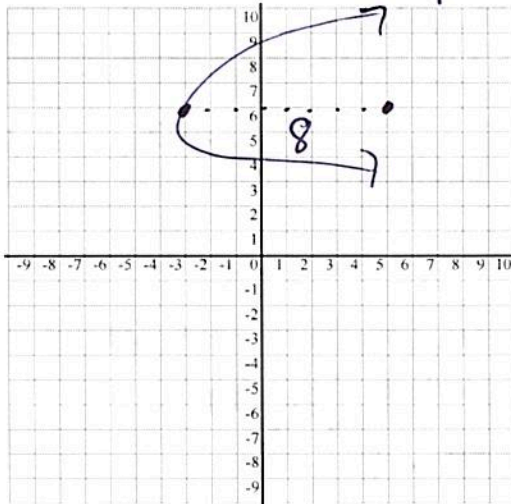
Horizontal: $(y-k)^2 = 4p(x-h)$

Given the following information, write the equation of the parabola.

1. Vertex $(-2, 5)$; $p = -1/2$; $4p = -2$
Vertical AOS \updownarrow

Equation: $(x+2)^2 = -2(y-5)$

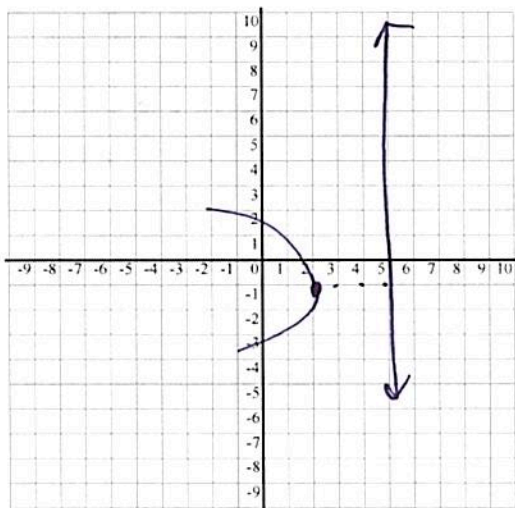
2. Vertex $(-3, 6)$ Focus $(5, 6)$ $p=8$



$p = 8$

Equation: $(y-6)^2 = 32(x+3)$

3. Vertex $(2, -1)$ Directrix: $x = 5$



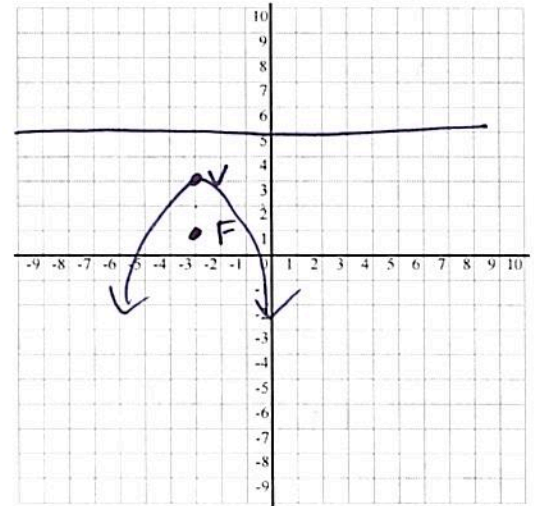
$p = -3$

Equation: $(y+1)^2 = -12(x-2)$

4. Vertex $(6, -1)$; $p = -3$;
Horizontal AOS \longleftrightarrow \curvearrowright $4p = -12$

Equation: $(y+1)^2 = -12(x-6)$

5. Directrix: $y = 5$ Focus $(-3, 1)$

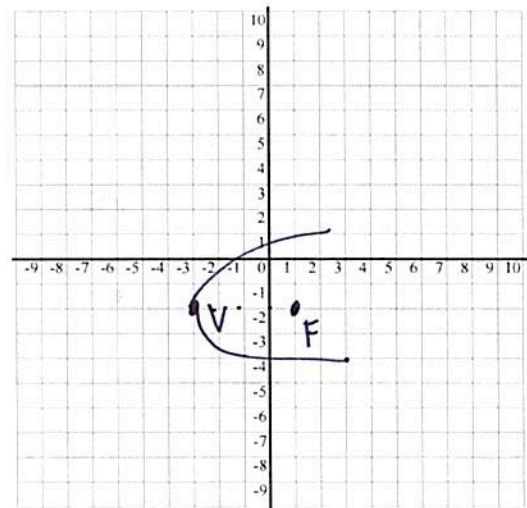


$p = -2$

Vertex: $(-3, 3)$

Equation: $(x+3)^2 = -8(y-3)$

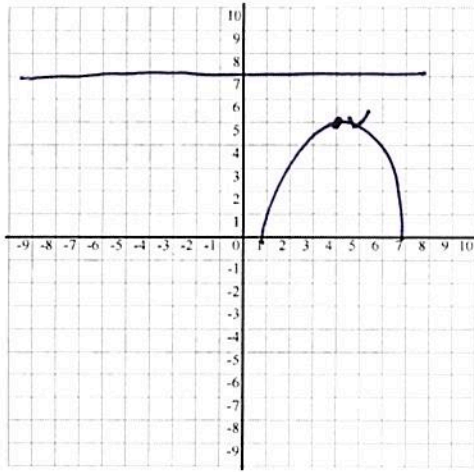
6. Vertex $(-3, -2)$ Focus $(1, -2)$



$p = 4$

Equation: $(y+2)^2 = 16(x+3)$

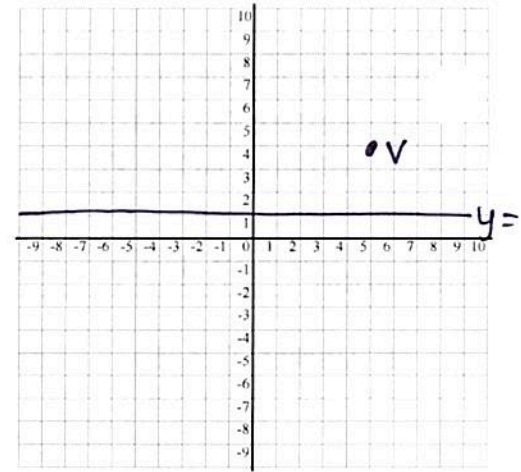
7. Vertex (4, 5) Directrix : $y = 7$



$p = -2$

Equation: $(x-4)^2 = -8(y-5)$

8. Vertex (5, 4) Directrix : $y = 1$



$p = 3$

Equation: $(x-5)^2 = 12(y-4)$

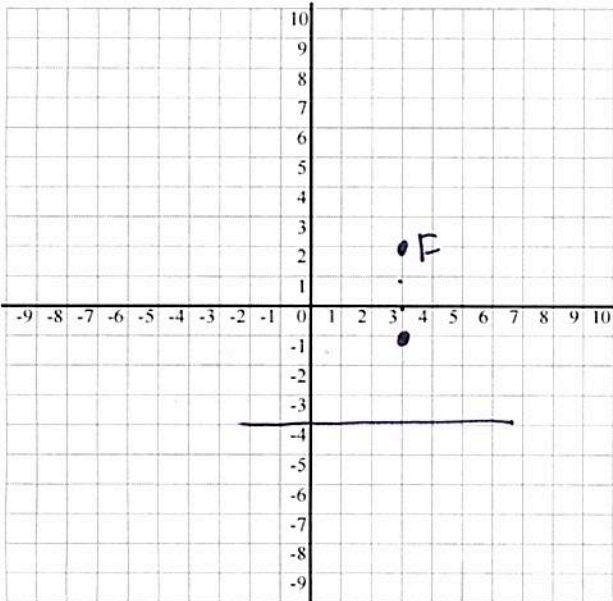
9. $(x-3)^2 = 12(y+1)$ $4p=12$
Vertex: (3, -1)

$p = 3$

Focus: (3, 2)

Directrix: $y = -4$

Axis: $x = 3$



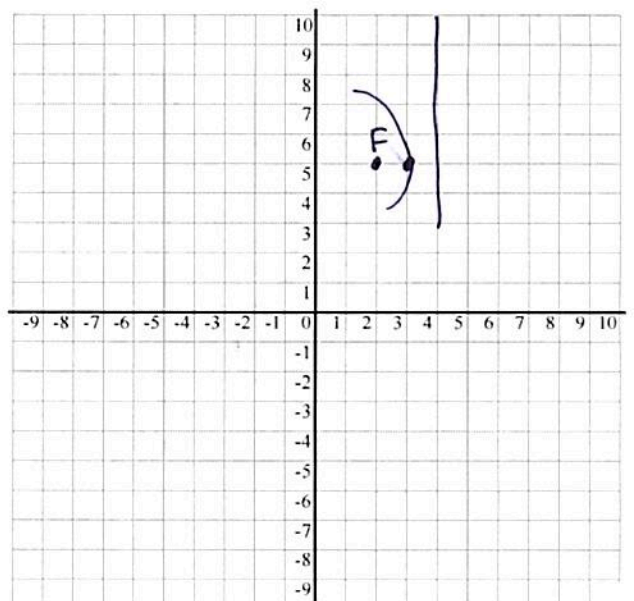
10. $(y-5)^2 = -4(x-3)$
Vertex: (3, 5)

$p = -1$

Focus: (2, 5)

Directrix: $x = 4$

Axis: $y = 5$



Parabola Conics Form:

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

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