

Algebra 2
Parabola Review

Name POSTED KEY
Date _____ Hour _____

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

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

Complete the square in order to write the equation in the form above. Identify the vertex.

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

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

(2, -2)

2. $y = x^2 + 6x + 11$

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

(-3, 2)

3. $x = y^2 - 12y + 5$

$$(y-6)^2 = x+31$$

(-31, 6)

4. $x = -3y^2 - 12y + 18$

$$(y+2)^2 = -\frac{1}{3}(x-30)$$

(30, -2)

Does the graph open up, down, right or left?

5. $y^2 = -4x$

LEFT

6. $x^2 + 10y = 0$

DOWN

7. $y^2 + 5x = 0$

LEFT

8. $x^2 = 5y$

UP

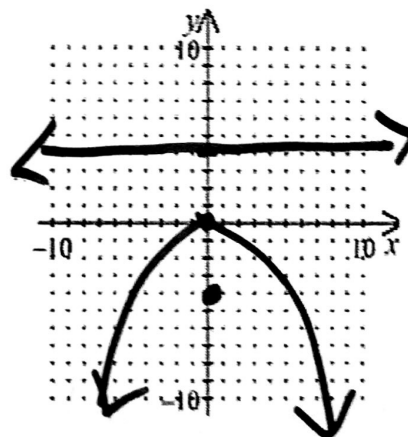
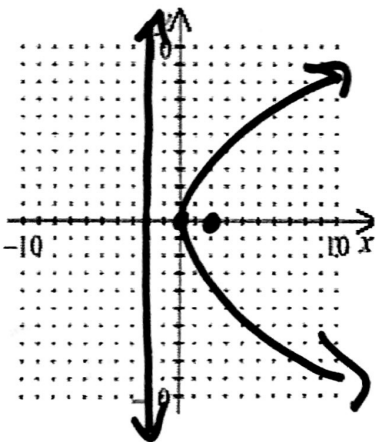
Determine the focus, directrix and vertex and then graph:

9. $y^2 - 8x = 0$

Equation:	$y^2 = 8x$
Focus:	$(2, 0)$
Directrix:	$x = -2$
Vertex:	$(0, 0)$

10. $x^2 + 16y = 0$

Equation:	$x^2 = -16y$
Focus:	$(0, -4)$
Directrix:	$y = 4$
Vertex:	$(0, 0)$



Write the equation for a parabola given:

11. vertex (0, 0) and focus (-3, 0)

$$y^2 = -12x$$

12. vertex (0, 0) and focus (5, 0).

$$y^2 = 20x$$

13. vertex (0,0) and directrix $y = 2$

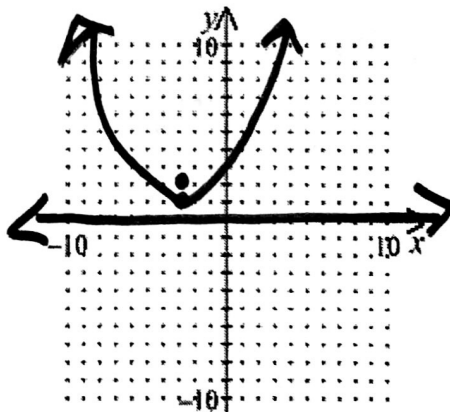
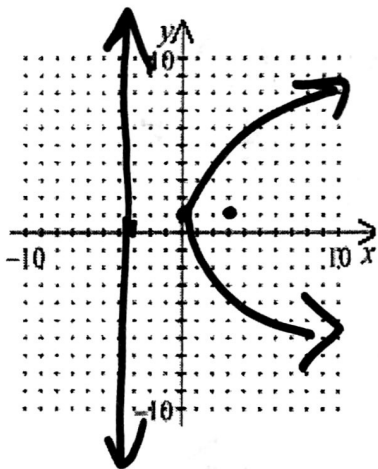
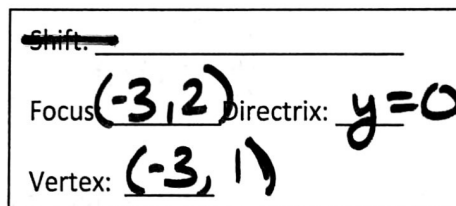
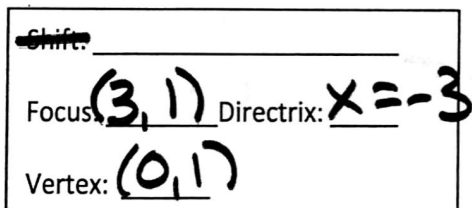
$$x^2 = -8y$$

14. Vertex (0, 0) and directrix $x = -4$

$$y^2 = 16x$$

15. $(y-1)^2 = 12(x)$

16. $(x+3)^2 = 4(y-1)$



Write the equation for a parabola given:

17. vertex (0,2) and focus (0,-3)

$$x^2 = -20(y-2)$$

18. vertex (-2, -4) and focus (5, -4)

$$(y+4)^2 = 28(x+2)$$

Algebra 2

CIRCLE REVIEW

Name _____
Date _____ Hour _____

$$(x - h)^2 + (y - k)^2 = r^2$$

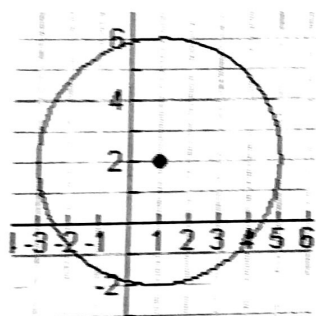
1. Write an equation for the circle whose center is at $(-2, -1)$ and whose radius is 4.

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

2. Write an equation for the circle whose center is at $(0, 0)$ with a radius of 7.

2.
$$x^2 + y^2 = 49$$

3. What is the equation of this circle?



3.
$$(x-1)^2 + (y-2)^2 = 16$$

4. Given $(x + 2)^2 + (y - 4)^2 = 25$, identify the center and radius.

4. Center: $(-2, 4)$
Radius: 5

5. Given $16x^2 + 16y^2 = 32$, find the center and radius.

5. Center: $(0, 0)$
Radius: $\sqrt{2} \approx 1.41$

6. The equation $x^2 + 2x + y^2 + 10y = 23$ is an equation of a circle. Write this in standard form and identify the center and radius.

6.
$$(x+1)^2 + (y+5)^2 = 49$$

Center: $(-1, -5)$
Radius: 7