Bellwork Alg 2B Thursday, December 7, 2017

Write the equation of each parabola.

1. Vertex is $(0,0)$ Focus $(-\frac{1}{16},0)$

EQ:

2. Vertex is $(0,0)$ Directrix is $y=-8$

EQ:

3. Vertex is $(0,0)$ Directrix is $x=\frac{7}{12}$

EQ:

State the coordinates of the Focus and the equation of the Directrix of each parabola. The vertex of each is the origin.

4. $y=-\frac{1}{20}x^2$

Focus: Directrix:

5. $x=3y^2$

Focus: Directrix:

6. Line k contains the points $(3,1)$ and $(4,4)$. If line m is a different line, parallel to line k in the same coordinate plane, which of the following could be the equation of line m?

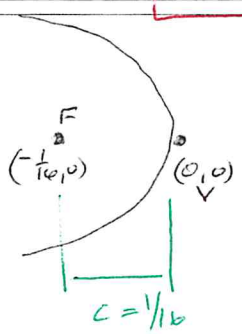
A. $y=3x-8$ B. $y=\frac{1}{3}x-3$ C. $y=-3x-8$ D. $y=3x+1$ E. $y=-8x+3$

Bellwork Alg 2B Thursday, December 7, 2017 **Answers**

Write the equation of each parabola.

1. Vertex is $(0,0)$ Focus $(-\frac{1}{16},0)$

EQ: $x = -4y^2$

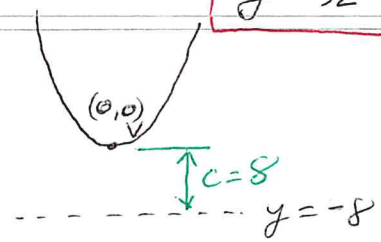


$|a| = \frac{1}{4(\frac{1}{16})} = \frac{1}{\frac{1}{4}}$

$|a| = 4$

2. Vertex is $(0,0)$ Directrix is $y = -8$

EQ: $y = \frac{1}{32}x^2$

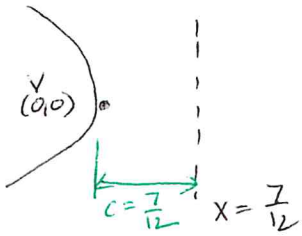


$|a| = \frac{1}{4(8)}$

$|a| = \frac{1}{32}$

3. Vertex is $(0,0)$ Directrix is $x = \frac{7}{12}$

EQ: $X = -\frac{3}{7}y^2$

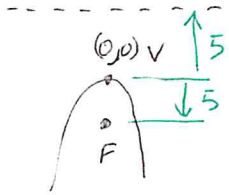


$|a| = \frac{1}{4(\frac{7}{12})} = \frac{1}{\frac{7}{3}} = \frac{3}{7}$

State the coordinates of the Focus and the equation of the Directrix of each parabola. The vertex of each is the origin.

4. $y = -\frac{1}{20}x^2$

Focus:	Directrix:
$(0,-5)$	$y = 5$



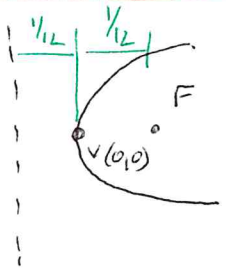
$c = \frac{1}{4(-\frac{1}{20})}$

$c = \frac{1}{-\frac{1}{5}}$

$c = -5$

5. $x = 3y^2$

Focus:	Directrix:
$(\frac{1}{12},0)$	$X = -\frac{1}{12}$



$c = \frac{1}{4(3)}$

$c = \frac{1}{12}$

6. Line k contains the points $(3,1)$ and $(4,4)$. If line m is a different line, parallel to line k in the same coordinate plane, which of the following could be the equation of line m?

A. $y = 3x - 8$ B. $y = \frac{1}{3}x - 3$ C. $y = -3x - 8$ **D. $y = 3x + 1$** E. $y = -8x + 3$

slope of line k: $m = \frac{4-1}{4-3} = \frac{3}{1} = 3$

y-int of line k:

$y - 4 = 3(x - 4)$

$y - 4 = 3x - 12$ y-int $= -8$

$y = 3x - 8$

$\Rightarrow$ line m must have the same slope ($m = 3$) but a different y-int (not -8)