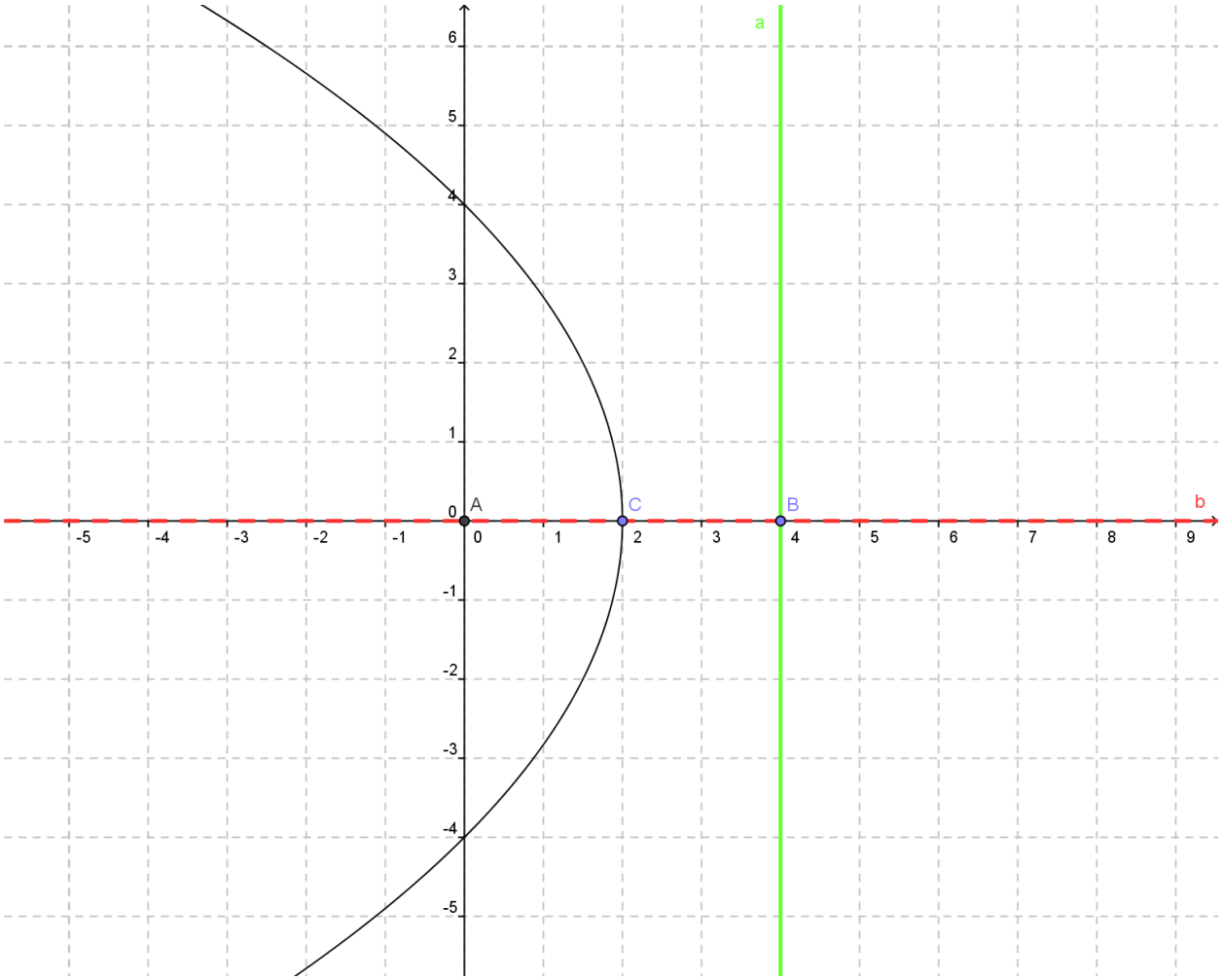
DIRECTIONS: Find an equation of the parabola described. You may want to sketch a graph to determine the direction the parabola opens (up, down, left, or right). Also remember $a = \frac{1}{4c}$.

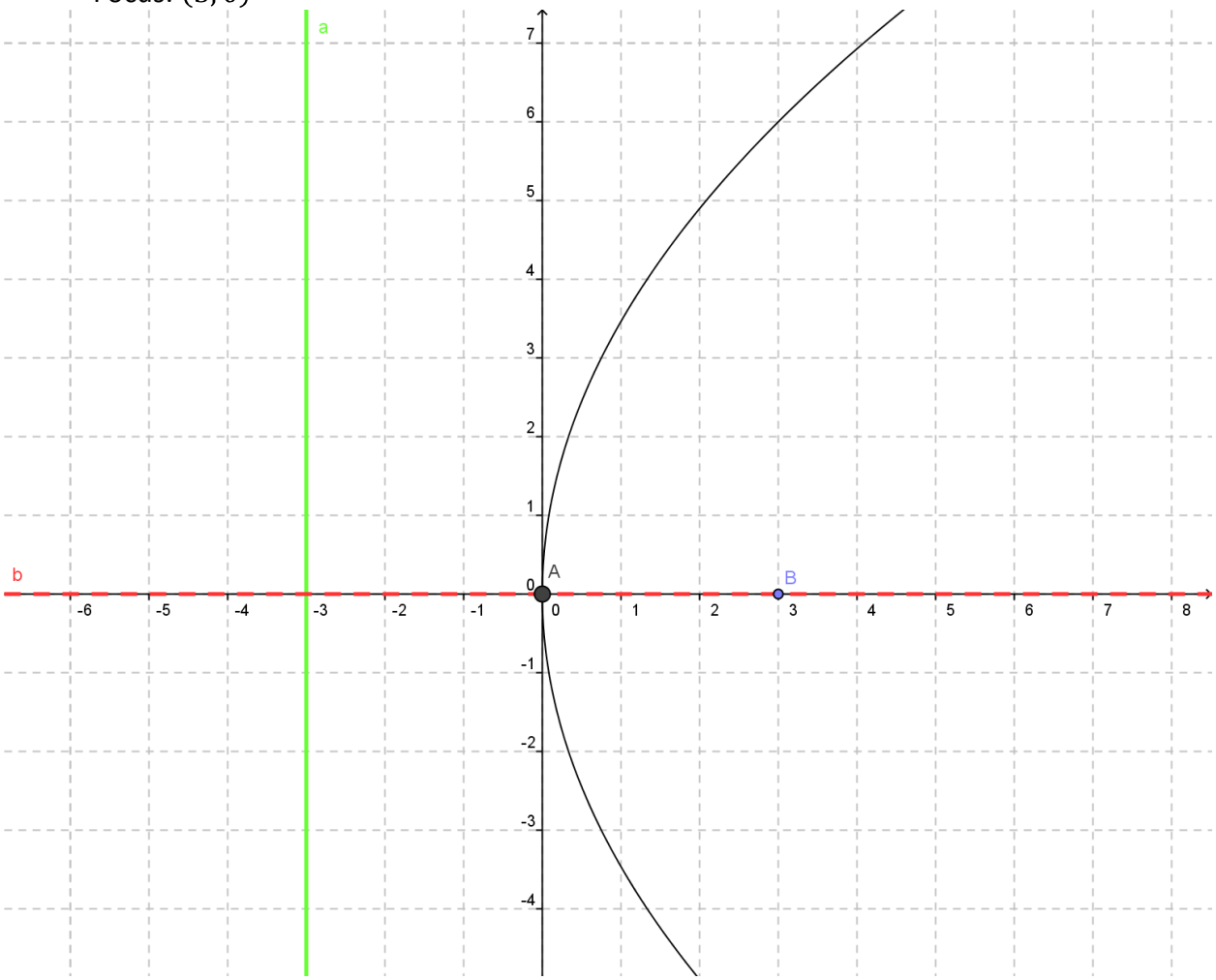
1. Focus: $(0, 0)$
Directrix: $x = 4$

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



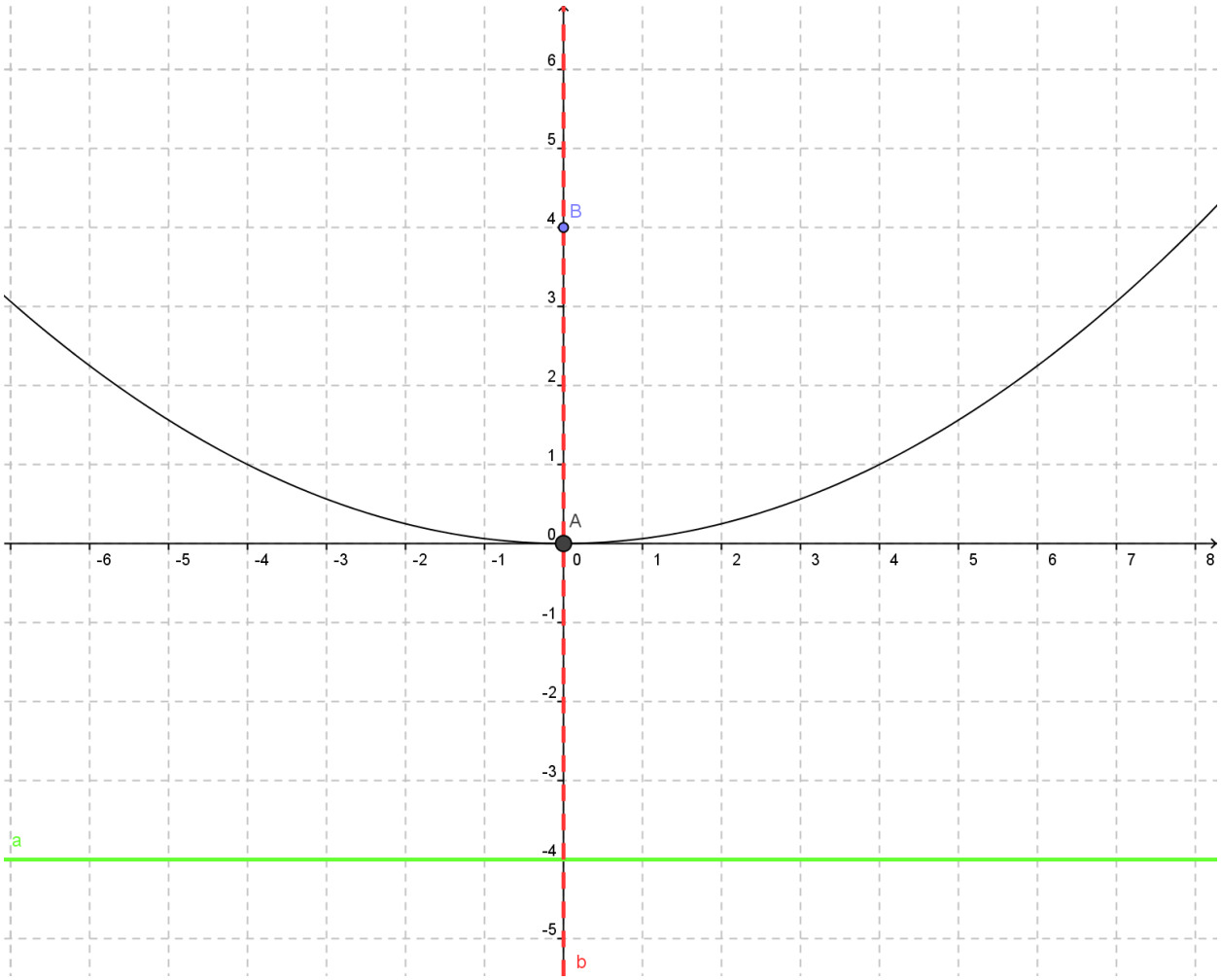
2. Vertex: $(0, 0)$ $x = \frac{1}{12}y^2$

Focus: $(3, 0)$



3. Vertex: $(0, 0)$ $y = \frac{1}{16}x^2$

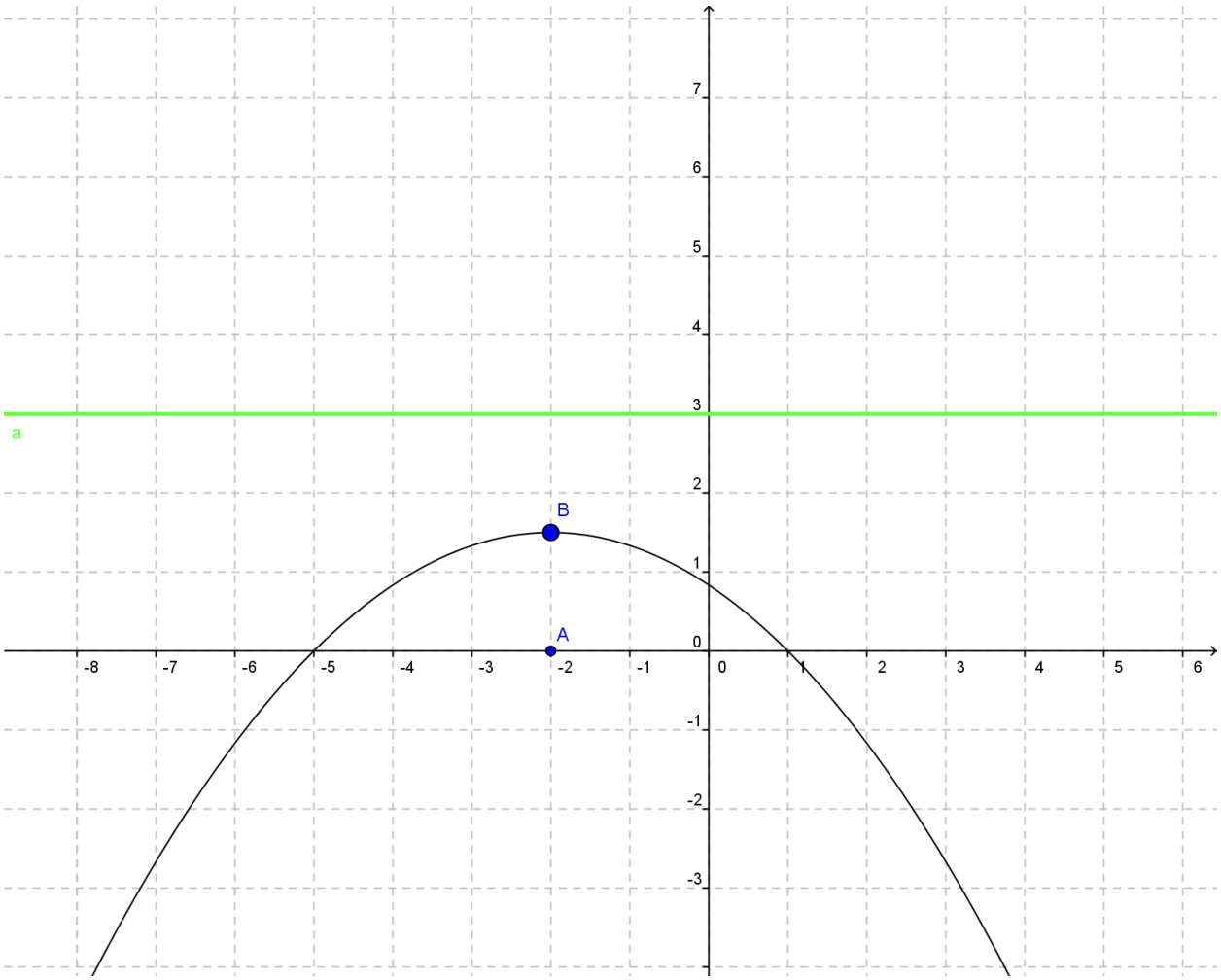
Directrix: $y = -4$



4. Focus: $(-2, 0)$

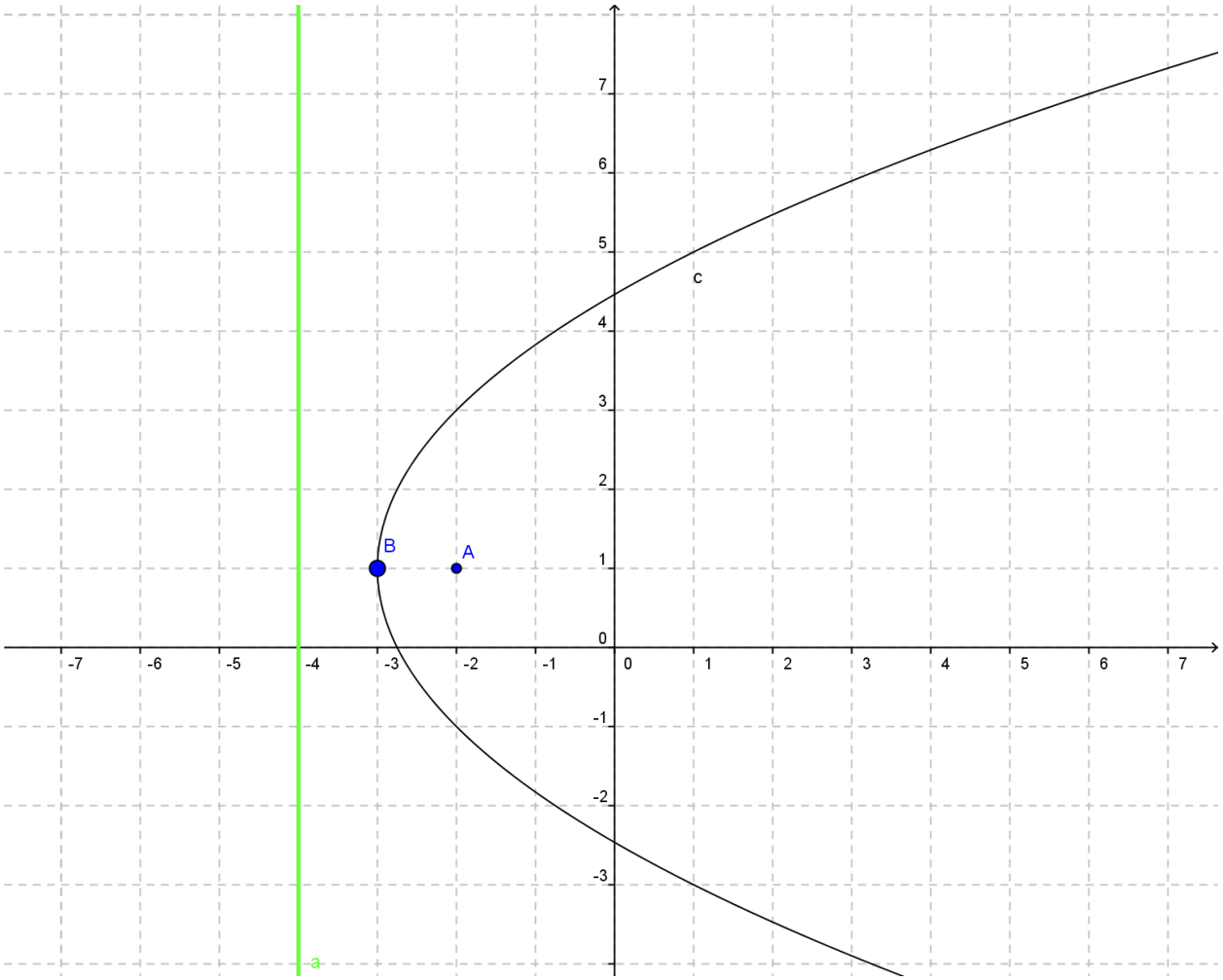
Directrix: $y = 3$

$y - \frac{3}{2} = -\frac{1}{6}(x + 2)^2$



5. Focus: $(-2, 1)$ $x + 3 = \frac{1}{4}(y - 1)^2$

Vertex: $(-3, 1)$



DIRECTIONS: For each parabola, find the vertex, focus, directrix, axis of symmetry, and direction the parabola opens (up, down, left, or right). You may need to use completing the square to get the equations into vertex form. Remember $a = \frac{1}{4c}$. Make graphs for #7, 8, & 10 (use five points).

6. $6x + y^2 = 0$ $x = -\frac{1}{6}y^2$ This means $|c| = \frac{3}{2}$

7. $x^2 = y + 2x$ $y + 1 = (x - 1)^2$ This means $|c| = \frac{1}{4}$

8. $y^2 + 6y + 8x - 7 = 0$ $x - 2 = -\frac{1}{8}(y + 3)^2$ This means $|c| = 2$

9. $x^2 - 6x + 10y - 1 = 0$ $y - 1 = -\frac{1}{10}(x - 3)^2$ This means $|c| = \frac{5}{2}$

10. $y^2 + 3x - 2y - 11 = 0$ $x - 4 = -\frac{1}{3}(y - 1)^2$ This means $|c| = \frac{3}{4}$

	Vertex	Focus	Directrix	Axis of Symmetry	Opens…
6	$(0, 0)$	$(-\frac{3}{2}, 0)$	$x = \frac{3}{2}$	$y = 0$	Left
7	$(1, -1)$	$(1, -\frac{3}{4})$	$y = -\frac{5}{4}$	$x = 1$	Up
8	$(2, -3)$	$(0, -3)$	$x = 4$	$y = -3$	Left
9	$(3, 1)$	$(3, -\frac{3}{2})$	$y = \frac{7}{2}$	$x = 3$	Down
10	$(4, 1)$	$(\frac{13}{4}, 1)$	$x = \frac{19}{4}$	$y = 1$	Left