

Name: _____

Show work needed to justify your answer.

Date: _____

HW: # 10b: Math IBSL - Standard 10 - Graphing Quadratic Functions

5 points

1. Use the information shown in the graph to find the quadratic function in standard (general) form

$$f(x) = a(x-p)(x-q)$$

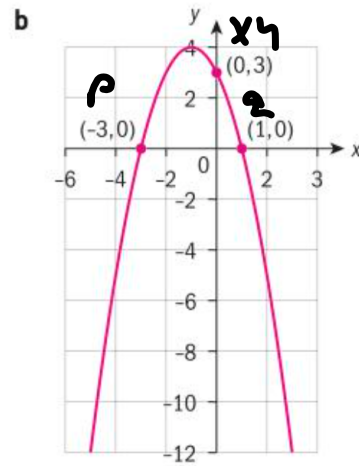
$$3 = a(0 - (-3))(0 - 1) \text{ "find a"}$$

$$3 = -3a \rightarrow a = -1$$

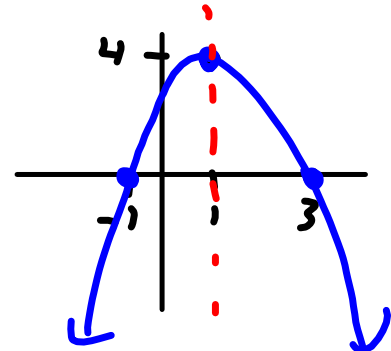
$$f(x) = -(x+3)(x-1)$$

$$f(x) = -(x^2 - 1x + 3x - 3)$$

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



2. The graph of the quadratic function $y = f(x)$ has x-intercepts $(-1, 0)$ and $(3, 0)$. The function has a maximum value of 4.



a. Find the equation of the axis of symmetry for the graph of $y = f(x)$

$$x = 1$$

b. Write down the coordinates of the vertex for the graph of $y = f(x)$.

$$(1, 4)$$

c. Find an equation for f in the form $f(x) = a(x-h)^2 + k$, where a , h and k are constants to be determined.

$$f(x) = -(x-1)^2 + 4$$

d. A translation of the graph of $y = f(x)$ right 4 units and down 5 units results in the graph of $y = g(x)$. Find an expression for the function $g(x)$ in the form $f(x) = ax^2 + bx + c$.

$$f(x) = -(x-5)^2 - 1$$

$$f(x) = -(x^2 - 10x + 25) - 1$$

$$f(x) = -x^2 + 10x - 26$$