Quiz 11

Math-1150-es32

2011 October 28

1 Extra credit. If 3 is an x-intercept of the graph of y = f(x) (so in other words, (3,0) is an intercept of that graph) then what must be an x-intercept of the graph of y = f(x-2)?

Since (3,0) is on the first graph, 0 = f(3). Now, 3 = x - 2 if x = 5, so 0 = f(5-2). Therefore,

(5, 0)

must be on the second graph.

2 On the number plane below, draw the graphs of these two equations. (Be sure to label which is which.)

You should be familiar with the graph of $y = x^2$; the key points are (0,0), (1,1), (-1,1), (2,4), and (-2,4). (The graph appears below in blue.) The other graphs are linear coordinate transformations of this one.

$$a \ y = (x-2)^2$$

This graph is shifted to the right by 2; in other words, add 2 to the first coordinate of each point. The key points become (2,0), (3,1), (1,1), (4,4), and (0,4). The graph appears below in purple.

 $b \ y = x^2 + 2$

This is shifted up by 2; in other words, add 2 to the second coordinate of each point. The key points become (0,2), (1,3), (-1,3), (2,6), and (-2,6). The graph appears below in brown.



(These graphs were produced by Wolfram Alpha.)