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,
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.)

