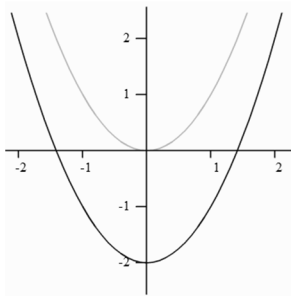
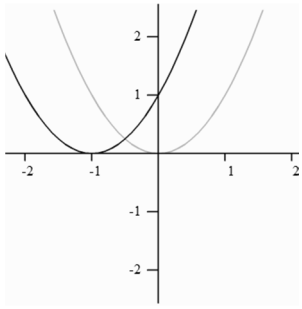
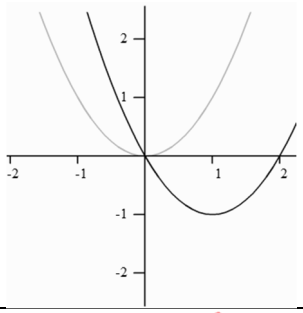
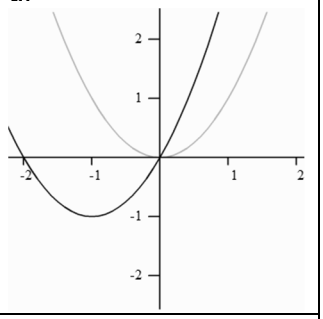
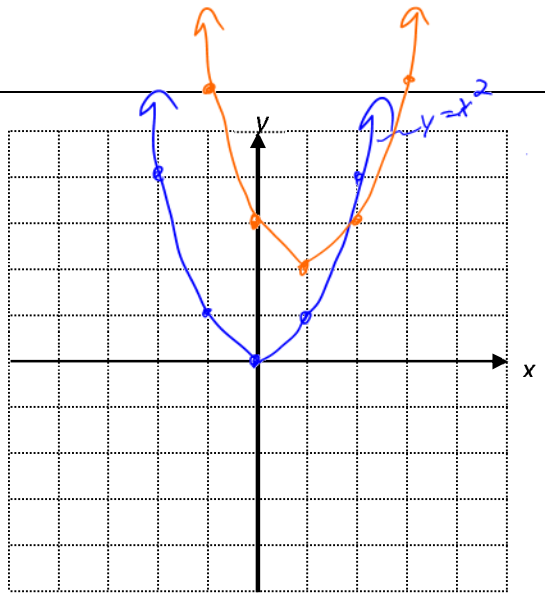
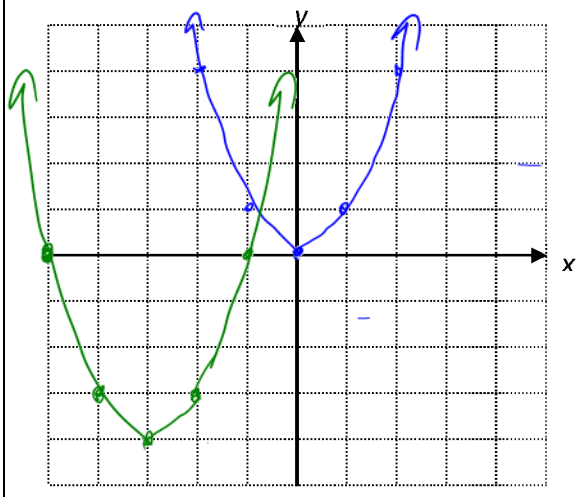
# DAY 3 – Changing Quadratic Relations: The Values of 'h' and 'k'

1. For each of the following, state how the value of *h* and/or *k* is affecting the basic parabola *horizontal (left/right) or vertical (up/down) translation.* The basic parabola, $y = x^2$, is shown with a dotted line.

| a. | b. | c. | d. |
|---|---|---|---|
|  |  |  |  |
| Down | Left | Down and Right | Down and Left |

2. State the transformations and graph each of the following parabolas.

| | a. $y = (x-1)^2 + 2$ | b. $y = (x+3)^2 - 4$ |
|---|---|---|
| (I) TRANSFORMATIONS | a=1<br>h=1 right one<br>K=2 up two | a=1<br>h=−3 Left 3<br>K=−4 down 4 |
| (II) GRAPH |  |  |

3. For each set of quadratics, circle the one that has it's vertex farther from the *x*-axis.

   a. $y = x^2 + 5$ $y = x^2 - 4$ b. $y = x^2 + 2$ $y = x^2 - 3$

4. For each set of quadratics, circle the one that has it's vertex farther from the *y*-axis.

   a. $y = (x+3)^2$ $y = (x-2)^2$ b. $y = (x-1)^2$ $y = (x-2)^2$