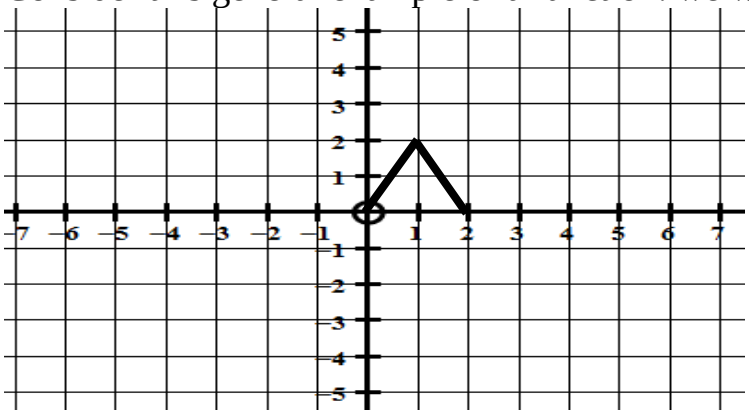
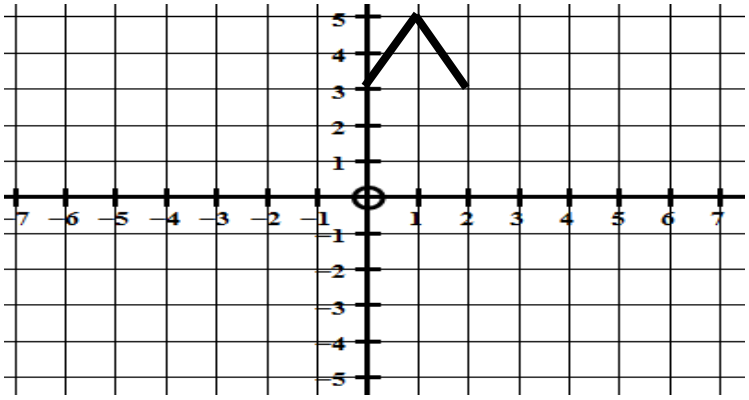
TRANSFORMATIONS OF GRAPHS.

Consider this general example of a function: we will call it $y = f(x)$

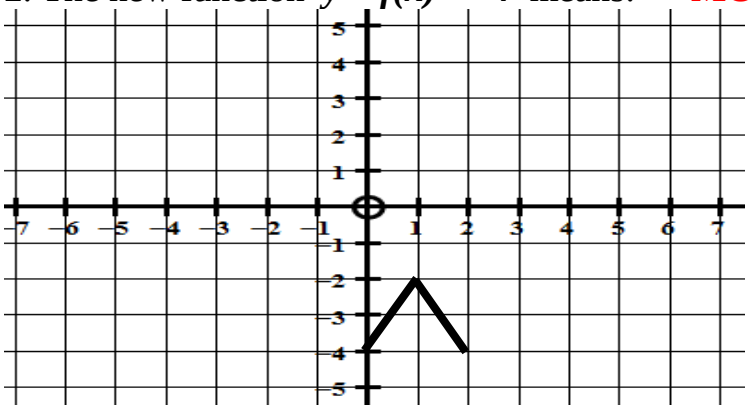


TRANSLATIONS:

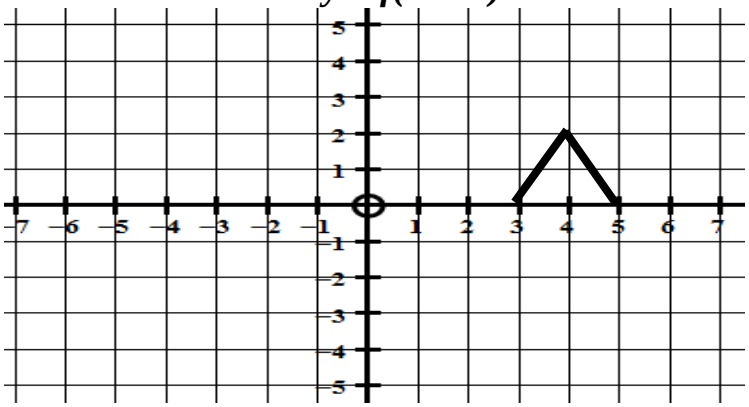
1. The new function $y = f(x) + 3$ means: **MOVE UP 3**



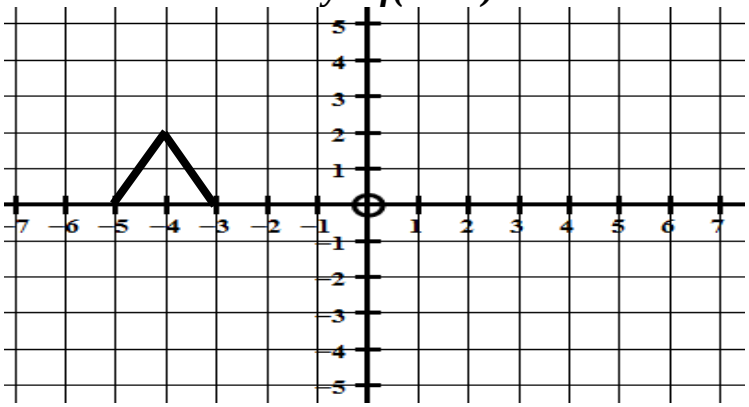
2. The new function $y = f(x) - 4$ means: **MOVE DOWN 4**



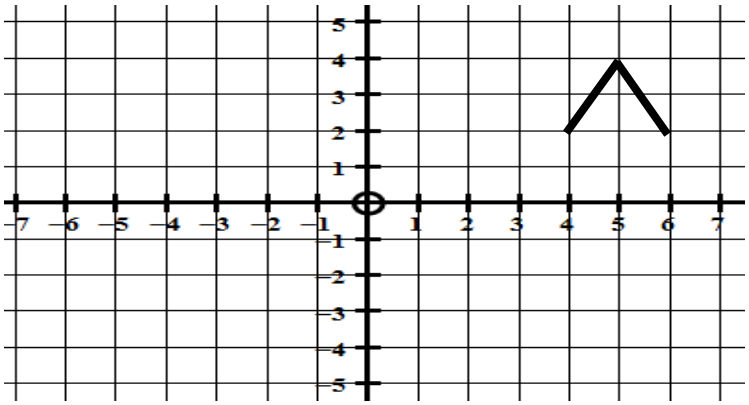
3. The new function $y = f(x - 3)$ means: **MOVE ALONG 3 TO THE RIGHT**



4. The new function $y = f(x + 5)$ means: **MOVE ALONG 5 TO THE LEFT**

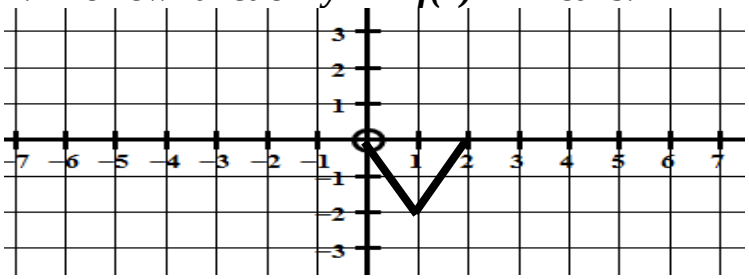


5. The new function $y = f(x - 4) + 2$ means: **MOVE ALONG 4 TO THE RIGHT THEN UP 2**

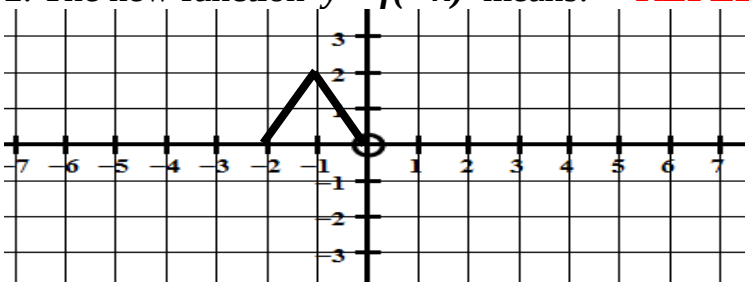


REFLECTIONS:

1. The new function $y = -f(x)$ means: **REFLECT IN THE *x* AXIS**

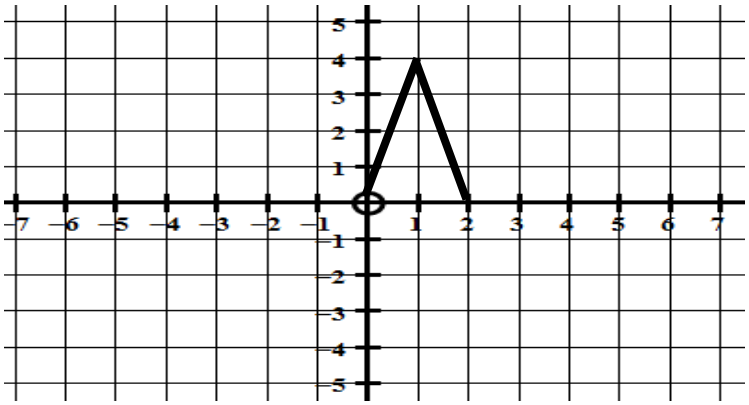


2. The new function $y = f(-x)$ means: **REFLECT IN THE *y* AXIS**



STRETCHING:

1. The new function $y = 2f(x)$ means: **STRETCH VERTICALLY by a factor of 2**



2. The new function $y = \frac{1}{2} f(x)$ means: **COMPRESS VERTICALLY by a factor of ½**