TRANSLATIONS:
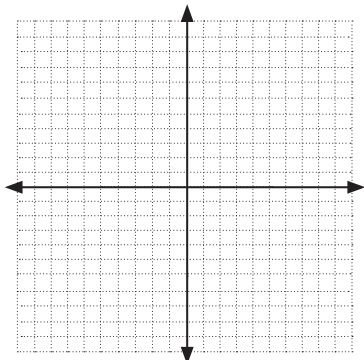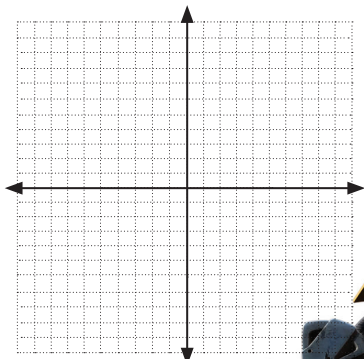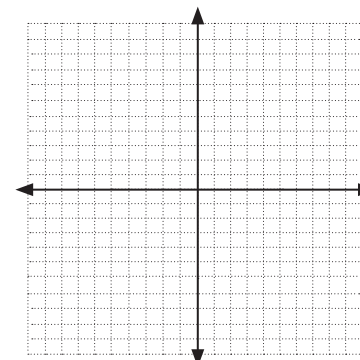
y=f(x)+c: translates the graph c units up
y=f(x)-c: translates the graph c units down

y=f(x+c): translates the graph c units left
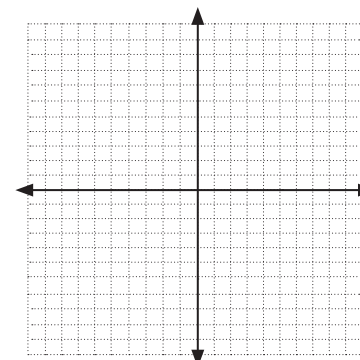y=f(x-c): translates the graph c units right

**

DILATIONS:

Vertical Stretch: multiply all y's by scale factor c
y=cf(x), c>1: expands the graph vertically
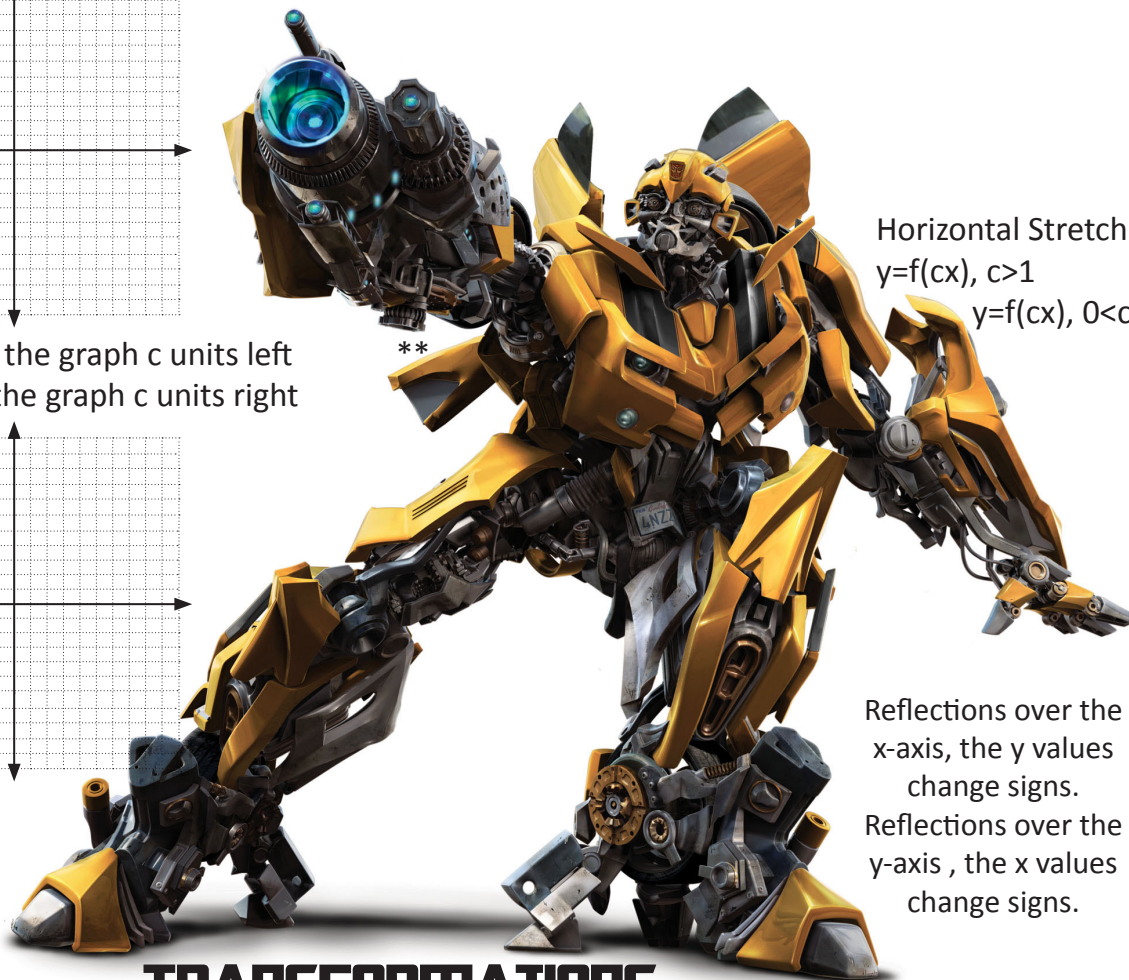y=cf(x), 0<c<1: compresses the graph vertically

Horizontal Stretch: multiply all x's by scale factor
y=f(cx), c>1
y=f(cx), 0<c<1

Reflections over the x-axis, the y values change signs.
Reflections over the y-axis , the x values change signs.

Multiply all y's by the stretch factor c!

The value of c is NOT the stretch factor! The stretch factor is the RECIPROCAL of c!
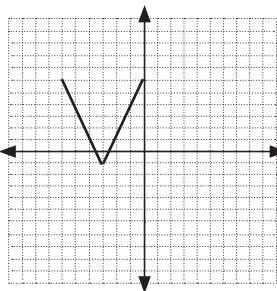
REFLECTIONS:

y=-f(x): reflected over the x-axis
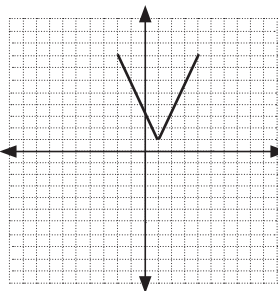y=f(-x): reflected over the y-axis
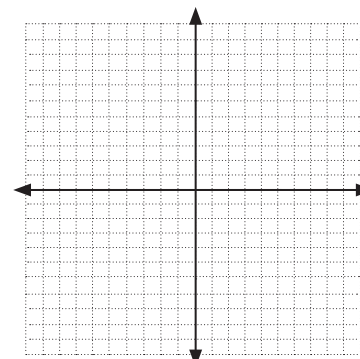
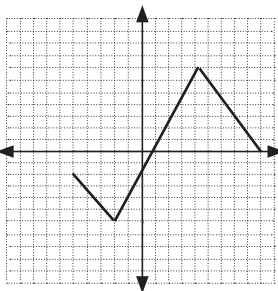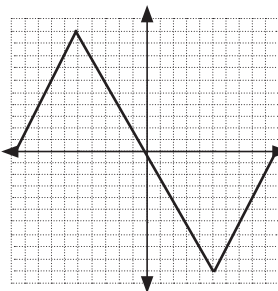# TRANSFORMATIONS

EXAMPLES:

1. Graph y=(f-3)

2. Graph y=f(x)+3

3. Graph y=-f(x)

4. Graph y=2f(x)

5. Graph y=f(1/2x)