

Remember to shift last!!

Key

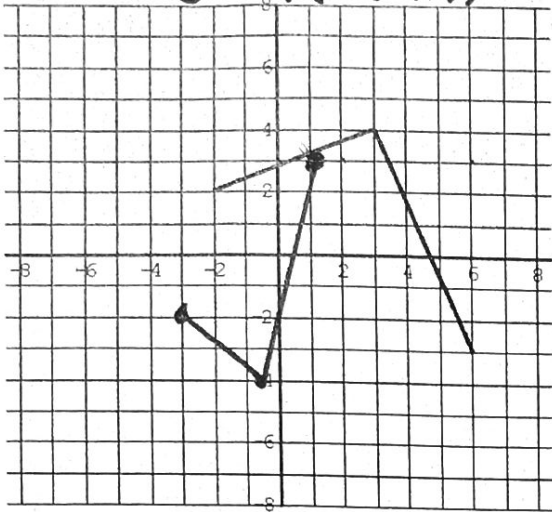
TRANSFORMATIONS LESSON 2

Part II: Combining All Transformations

Questions: For each of the graphs, apply the transformation:

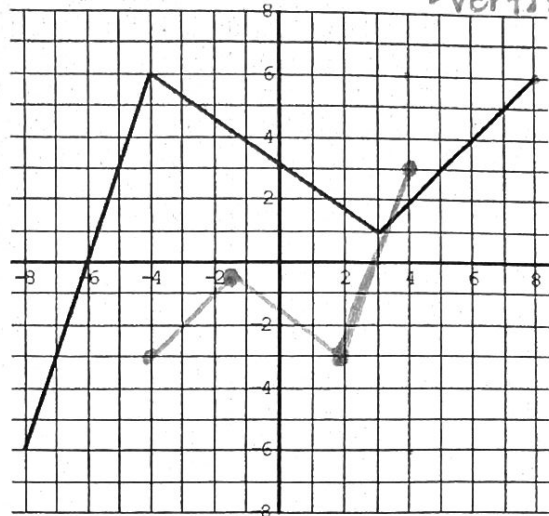
1) $y = -f(2x+4)$
 $y = -f(2(x+2))$

- reflect over x-axis
- horizontal shrink by $\frac{1}{2}$
- shift left + 2

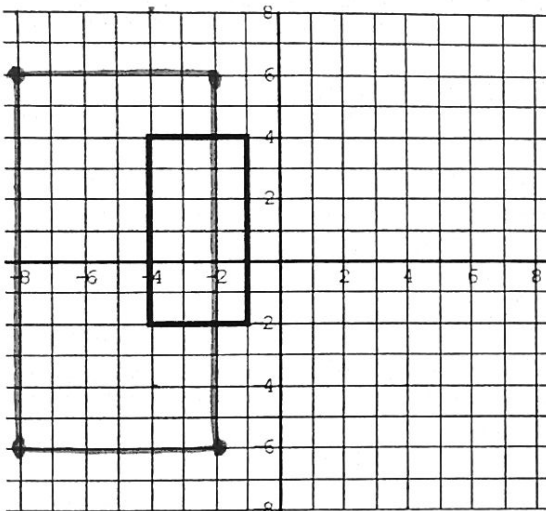


2) $y = -\frac{1}{2}f(-2x)$

- reflect over axes
- x \leftrightarrow y
- Vert. \neq horiz. shrink by $\frac{1}{2}$

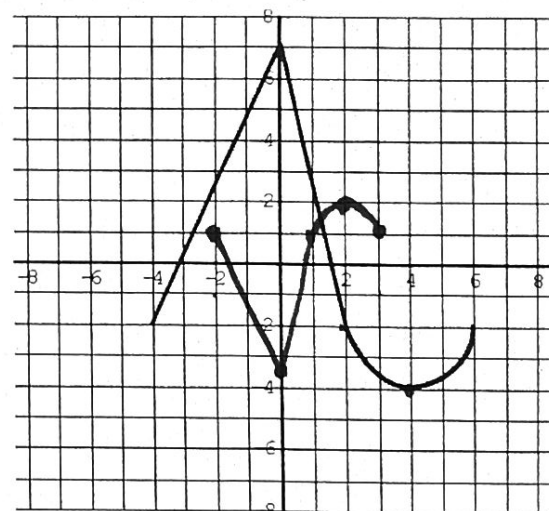


3) $y = 2f(\frac{1}{2}x) - 2$



- vertical stretch by 2
- horizontal stretch by 2
- shift down 2

4) $y = -\frac{1}{2}f(2x)$



- reflect over x-axis
- vertical shrink by $\frac{1}{2}$
- horiz. shrink by $\frac{1}{2}$ (compression)

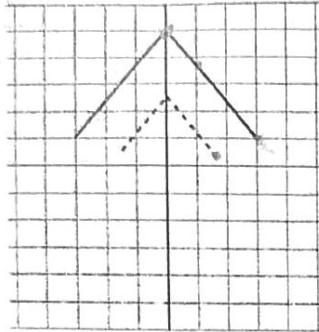
TRANSFORMATIONS LESSON 2

Part II: Combining All Transformations

Questions: For each of the following graphs, write the equation of the transformation:

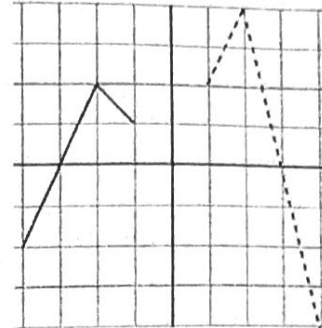
Solid = Original
Dashed = Transformed

5)



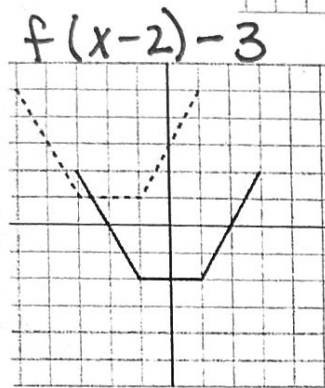
$$\frac{1}{2}f(x) - 2$$

6)



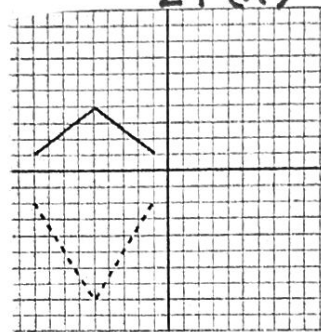
$$2f(-x) + 2$$

7)



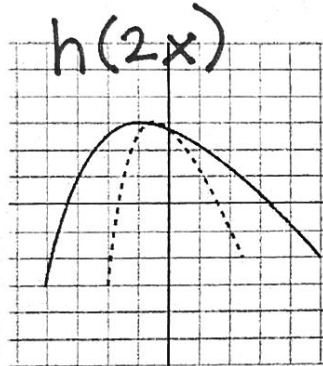
$$f(x-2) - 3$$

8)



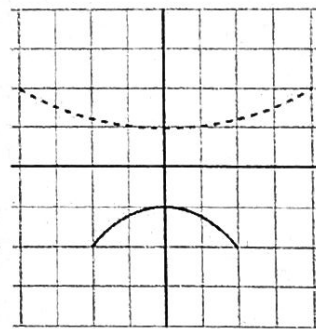
$$-2f(x)$$

9)



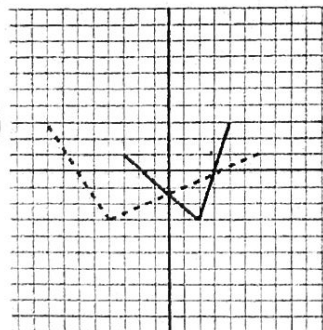
$$h(2x)$$

10)



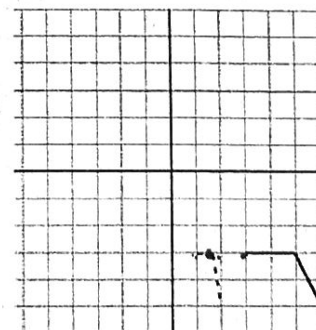
$$-g\left(\frac{1}{2}x\right)$$

11)



$$f(-3x)$$

12)



$$f(3x)$$