

4.1 Transformations APP



4.1 Transformations

APPLICATION

1. $y = 2(3 - x)^3$
 $y = 2[-(x-3)]^3$ NAME: Cubic

Translation: Right 3

Scale: Vertical stretch by 2

Reflection: about y-axis

2. Given the parent function $y = [x]$, write the equation of the following transformation.

Vertical shift up 2, horizontal shift left 3,
reflect about x-axis

$$y = -[x+3] + 2$$

Describe the transformation (translation, scale, and/or reflection) that happens to the function $f(x)$.

3. $f(x) + 2$

Translate up 2

4. $f(x - 3)$

Translate right 3

5. $-f(x + 1) - 5$

Reflect about x-axis
Translate left 1 and down 5

Describe the transformation (translation, scale, and/or reflection) that happens to the function $f(x)$.

6. $3f(x) + 2$

Vertical stretch of 3
Translate up 2

7. $f(3-x) + 2$

$f[-(x-3)] + 2$

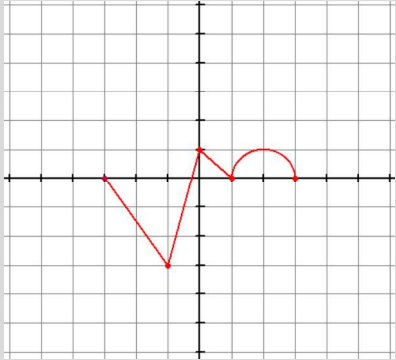
Reflect about y-axis
Translate right 3 and up 2.

8. $-5f(2x+4) - 7$

$-5f[\frac{1}{2}(x+2)] - 7$

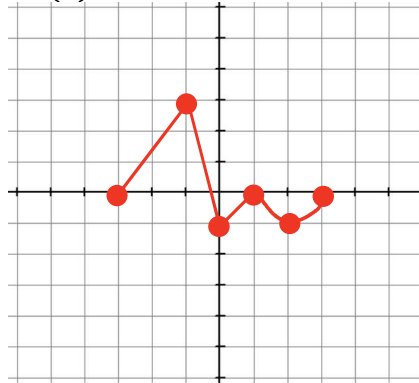
Reflect about y-axis
Stretch vertically by 5
Shrink horizontally by $\frac{1}{2}$
Translate left 2 and down 7

Given the $h(x)$ is shown below:

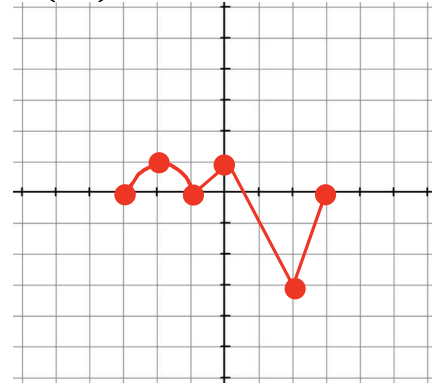


Sketch a graph of the following:

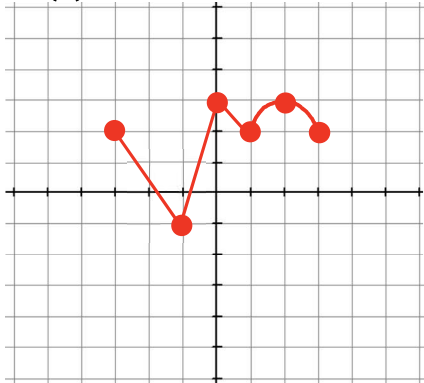
9. $-h(x)$



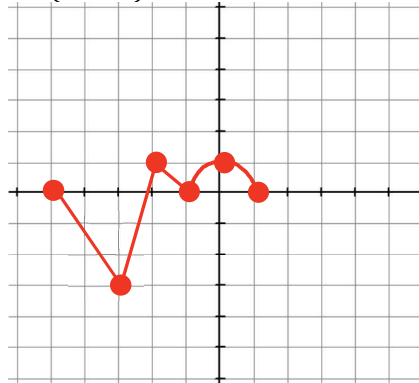
10. $h(-x)$



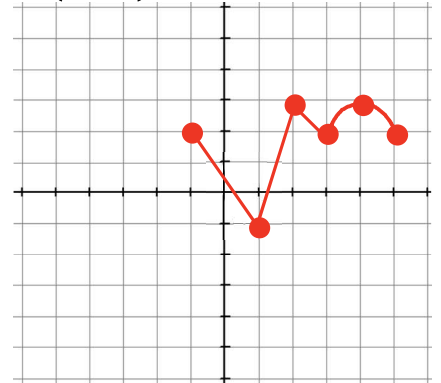
11. $h(x) + 2$



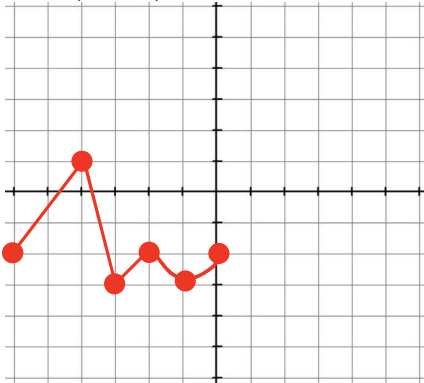
12. $h(x+2)$



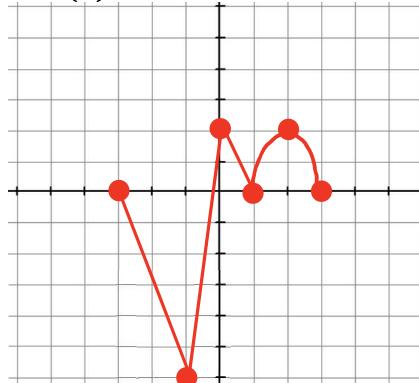
13. $h(x-1) + 2$



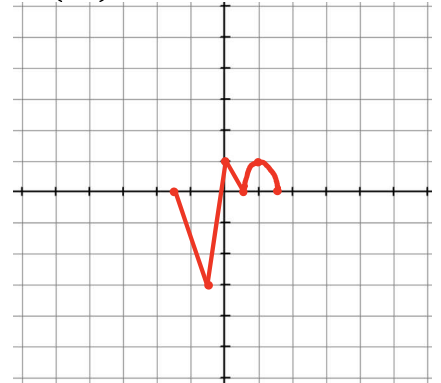
14. $-h(x+3) - 2$



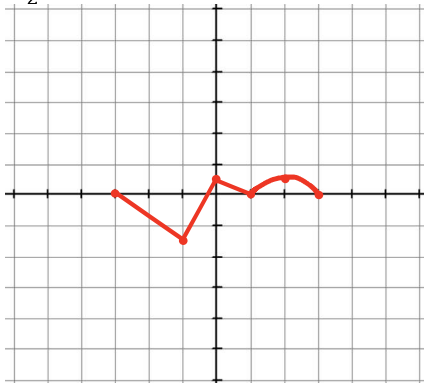
15. $2h(x)$



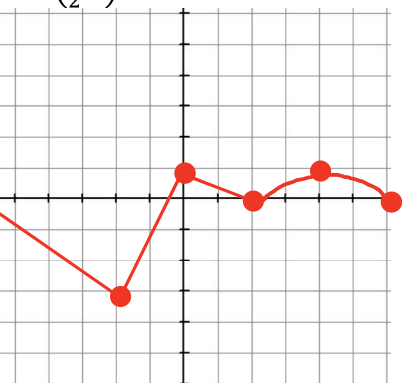
16. $h(2x)$



17. $\frac{1}{2}h(x)$



18. $h(\frac{1}{2}x)$



19. $-2h(x-1) - 3$

