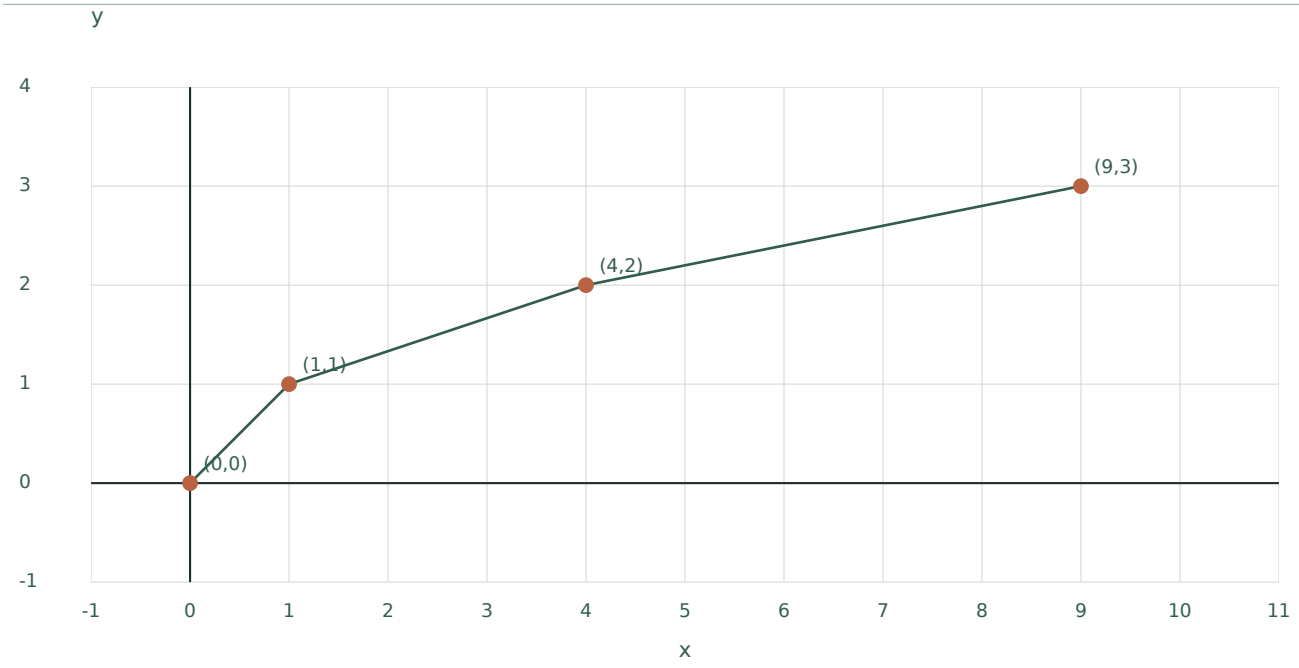
Plot Graph Transformations: Shift, Stretch, and Reflect with Confidence

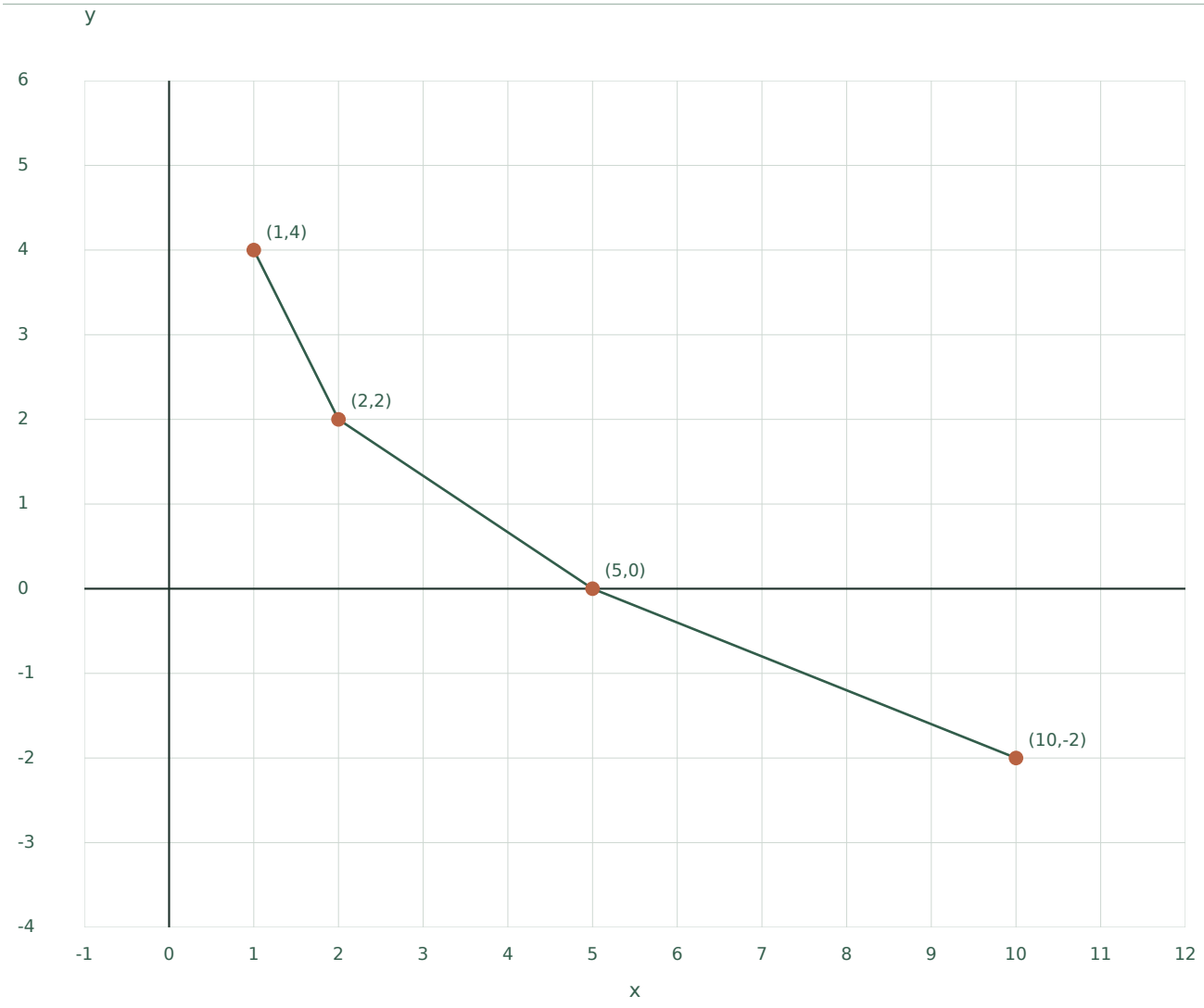
Parent function y = f(x) with key points



Parent function illustration for the diagram set.

Plot Graph Transformations: Shift, Stretch, and Reflect with Confidence

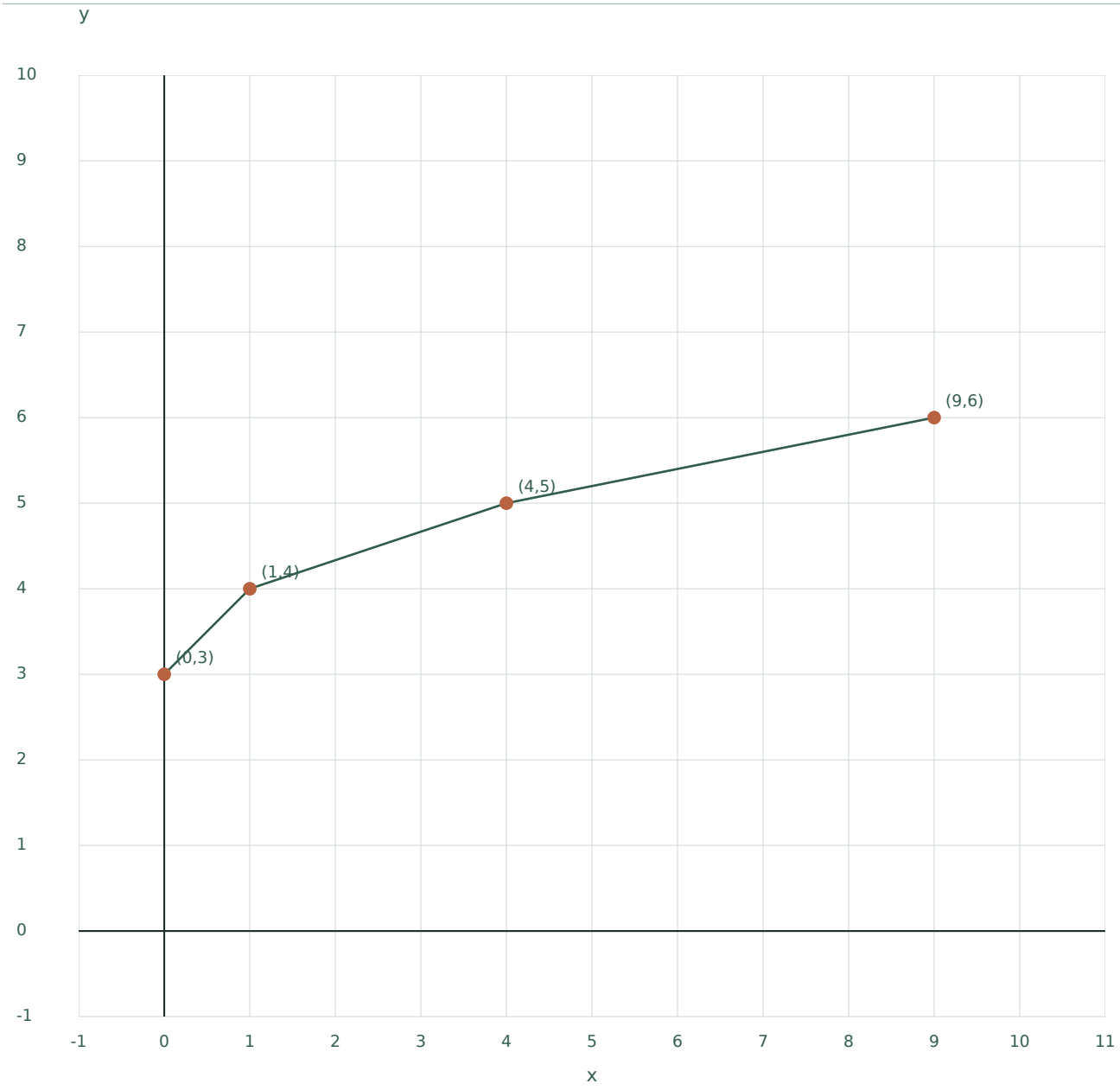
Answer key: worked example y = -2f(x - 1) + 4



Worked-example transformed graph.

Plot Graph Transformations: Shift, Stretch, and Reflect with Confidence

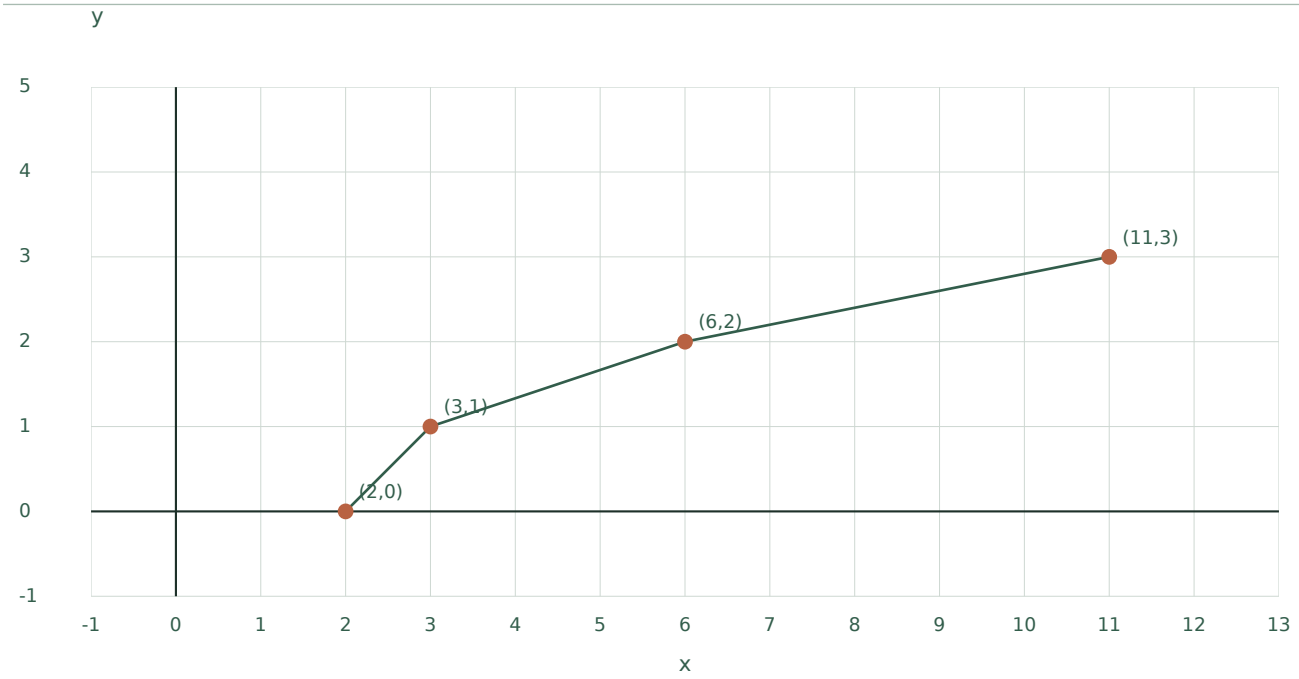
Answer key: y = f(x) + 3



Exercise 1 answer graph.

Plot Graph Transformations: Shift, Stretch, and Reflect with Confidence

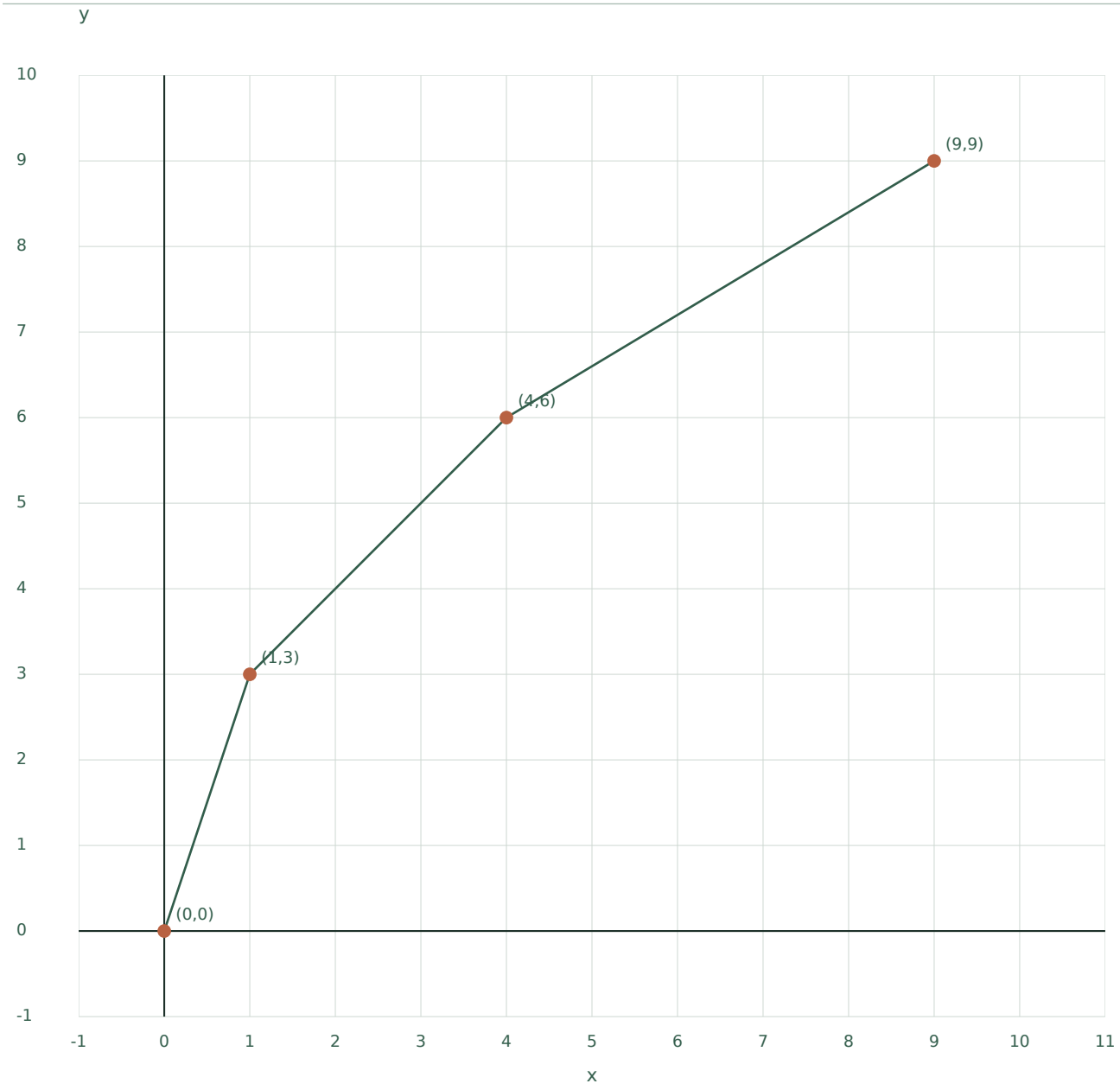
Answer key: y = f(x - 2)



Exercise 2 answer graph.

Plot Graph Transformations: Shift, Stretch, and Reflect with Confidence

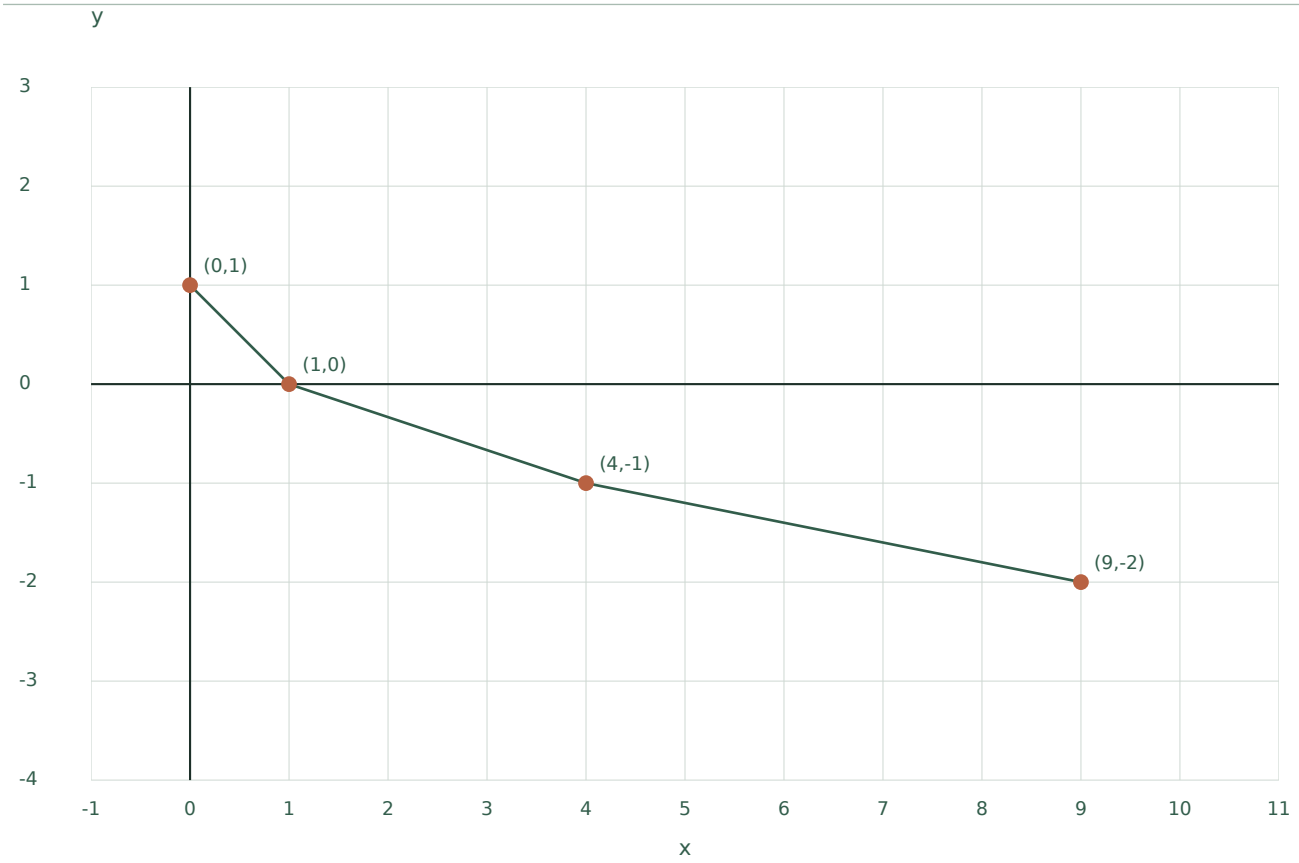
Answer key: y = 3f(x)



Exercise 3 answer graph.

Plot Graph Transformations: Shift, Stretch, and Reflect with Confidence

Answer key: y = -f(x) + 1



Exercise 4 answer graph.

Plot Graph Transformations: Shift, Stretch, and Reflect with Confidence

Answer key: point lists and descriptions

Transformed point lists and brief descriptions of each change.

Rule	Transformed points	Description of change
y = -2f(x - 1) + 4	(1,4), (2,2), (5,0), (10,-2)	Shift right 1, stretch vertically by 2, reflect across x-axis, shift up 4.
y = f(x) + 3	(0,3), (1,4), (4,5), (9,6)	Shift up 3.
y = f(x - 2)	(2,0), (3,1), (6,2), (11,3)	Shift right 2.
y = 3f(x)	(0,0), (1,3), (4,6), (9,9)	Vertical stretch by factor 3.
y = -f(x) + 1	(0,1), (1,0), (4,-1), (9,-2)	Reflect across x-axis, then shift up 1.
y = f(-x)	(0,0), (-1,1), (-4,2), (-9,3)	Reflect across y-axis.

Plot Graph Transformations: Shift, Stretch, and Reflect with Confidence

Rubric

Rubric criteria for scoring the worksheet and answer key.

Criterion	Description
1	Correctly identifies the parent function and at least four key points.
2	Applies horizontal changes to x-coordinates with the correct opposite-sign shift.
3	Applies vertical stretch or compression and any reflection to y-coordinates correctly.
4	Plots transformed points accurately on a labeled grid with consistent scale.
5	Connects points smoothly in the same order as the parent graph.
6	Labels the transformed equation and shows a check by substitution or point comparison.
7	Uses a clearly defined convention for any sketch or handwriting, such as labeling axes and marking key points, while allowing valid alternative point choices.