Activity 1.2: Transformations of Functions

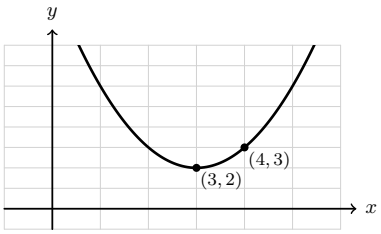
A

Name: _____ Partner's name: _____ Date: _____

Directions: Answer each question about transformations. Problem 1 uses a graph. Graphs are drawn accurately.
Work alone, then compare after each problem. If answers differ, find the mistake together.

1

Write the equation of the parabola shown.



Answer: _____ Match? ☐ Yes ☐ No

2

$g(x)$ is $f(x)$ shifted right 2 units and up 4 units. Write $g(x)$ in terms of f.

Answer: _____ Match? ☐ Yes ☐ No

3

Write the equation of the graph of $f(x) = 2x + 3$ reflected over the x-axis.

Answer: _____ Match? ☐ Yes ☐ No

4

$f(x) = x^2$ is stretched vertically by a factor of 9. Write the new function.

Answer: _____ Match? ☐ Yes ☐ No

5

Write the equation of $y = x^2$ shifted left 4 units and down 1 unit.

Answer: _____ Match? ☐ Yes ☐ No

6

Find the range of $y = \sqrt{x+2} - 3$.

Answer: _____ Match? ☐ Yes ☐ No

7

Is $f(x) = x^3 - x$ even, odd, or neither?

Answer: _____ Match? ☐ Yes ☐ No

8

Let $f(x) = x^2$ and $g(x) = 2f(x-1)+3$. Find $g(3)$.

Answer: _____ Match? ☐ Yes ☐ No

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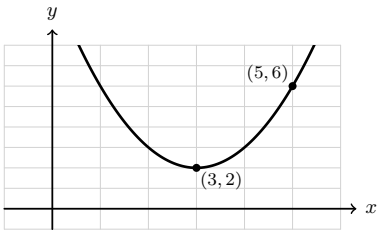
B

Name: _____ Partner's name: _____ Date: _____

Directions: Answer each question about transformations. Problem 1 uses a graph. Graphs are drawn accurately.
Work alone, then compare after each problem. If answers differ, find the mistake together.

1

Write the equation of the parabola shown.



Answer: _____ Match? ☐ Yes ☐ No

2

$h(x)$ is $f(x)$ shifted up 4 units and then right 2 units. Write $h(x)$ in terms of f.

Answer: _____ Match? ☐ Yes ☐ No

3

Write the equation of the graph of $f(x) = 2x - 3$ reflected over the y-axis.

Answer: _____ Match? ☐ Yes ☐ No

4

$f(x) = x^2$ is compressed horizontally by a factor of $\frac{1}{3}$. Write the new function $f(3x)$ in simplified form.

Answer: _____ Match? ☐ Yes ☐ No

5

A parabola opens up, has the same width as $y = x^2$, and has vertex $(-4, -1)$. Write its equation.

Answer: _____ Match? ☐ Yes ☐ No

6

Find the range of $y = \sqrt{x - 5} - 3$.

Answer: _____ Match? ☐ Yes ☐ No

7

Is $g(x) = x^5 + 2x^3$ even, odd, or neither?

Answer: _____ Match? ☐ Yes ☐ No

8

Let $f(x) = x^2$ and $g(x) = f(x+2) - 14$. Find $g(3)$.

Answer: _____ Match? ☐ Yes ☐ No