Activity 1.1: Function Operations & Evaluation

A

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

Directions: Evaluate or simplify as directed. Show your work.

Work alone, then compare after each problem. If answers differ, find the mistake together.

1

If $f(x) = 2x^2 - 3x + 1$, find $f(3)$.

Answer: _____ Match? ☐ Yes ☐ No

2

If $f(x) = 2x + 1$ and $g(x) = x^2$, find $f(g(3))$.

Answer: _____ Match? ☐ Yes ☐ No

3

State the domain of $f(x) = \sqrt{x - 4}$.

Answer: _____ Match? ☐ Yes ☐ No

4

Find the inverse of $f(x) = 3x - 6$.

Answer: _____ Match? ☐ Yes ☐ No

5

If $f(x) = x^2 + 2x$ and $g(x) = 3x - 5$, find $(f + g)(x)$.

Answer: _____ Match? ☐ Yes ☐ No

6

If $f(x) = x + 3$ and $g(x) = 2x - 1$, find $(f \cdot g)(2)$.

Answer: _____ Match? ☐ Yes ☐ No

7

$$f(x) = \begin{cases} x + 2, & x < 1 \\ x^2, & x \geq 1 \end{cases}$$ Find $f(-3) + f(2)$.

Answer: _____ Match? ☐ Yes ☐ No

8

Find the average rate of change of $f(x) = x^2$ on the interval $[1, 4]$.

Answer: _____ Match? ☐ Yes ☐ No

Activity 1.1: Function Operations & Evaluation

B

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

Directions: Evaluate or simplify as directed. Show your work.

Work alone, then compare after each problem. If answers differ, find the mistake together.

1

If $g(x) = x^2 + x - 2$, find $g(3)$.

Answer: _____ Match? ☐ Yes ☐ No

2

If $h(x) = 3x - 2$ and $k(x) = x + 4$, find $h(k(3))$.

Answer: _____ Match? ☐ Yes ☐ No

3

State the domain of $f(x) = \sqrt{2x - 8}$.

Answer: _____ Match? ☐ Yes ☐ No

4

Find the inverse of $g(x) = 3(x - 2)$.

Answer: _____ Match? ☐ Yes ☐ No

5

If $f(x) = x^2 - x$ and $g(x) = 6x - 5$, find $(f + g)(x)$.

Answer: _____ Match? ☐ Yes ☐ No

6

If $f(x) = x^2 + 1$ and $g(x) = x + 1$, find $(f \cdot g)(2)$.

Answer: _____ Match? ☐ Yes ☐ No

7

$$g(x) = \begin{cases} x - 1, & x < 0 \\ 2x, & x \geq 0 \end{cases}$$ Find $g(-2) + g(3)$.

Answer: _____ Match? ☐ Yes ☐ No

8

Find the average rate of change of $g(x) = x^2 + x$ on the interval $[1, 3]$.

Answer: _____ Match? ☐ Yes ☐ No