

Classwork Operations on Functions

Please work all problems on a separate sheet of paper.

In exercises 1 – 5 use the given functions f and g to find $(f + g)(x)$, $(f - g)(x)$, $(fg)(x)$, and $\left(\frac{f}{g}\right)(x)$. In addition find their respective domains.

$$1. \ f(x) = 3x + 1, \ g(x) = 2x - 3$$

$$2. \ f(x) = 2x - 4, \ g(x) = x^2 + 3$$

$$3. \ f(x) = x^2 + 5x + 2, \ g(x) = x - 6$$

$$4. \ f(x) = \frac{2}{x-3}, \ g(x) = \frac{1}{x+2}$$

$$5. \ f(x) = \sqrt{x}, \ g(x) = x^2 - 4$$

In exercises 6 – 9 use the given functions f and g to find $(f \circ g)(x)$ and $(g \circ f)(x)$ to

$$6. \ f(x) = 2x^2 + 7, \ g(x) = 3x - 4$$

$$7. \ f(x) = x^2 + 4x + 3, \ g(x) = x - 7$$

$$8. \ f(x) = x^2 + 2, \ g(x) = \sqrt{x-4}$$

$$9. \ f(x) = x + 3, \ g(x) = \frac{1}{x}$$