
DIRECTIONS Give complete solutions to the following problems be sure to provide all the necessary steps to support your answers.

1. $f = \{(1, 2), (2, 3), (3, 3)\}, g = \{(1, 0), (2, 3), (3, 2), (4, 8)\}$

a) Find $(f + g)(2) =$ Ans _____

b) Find the domain of $f + g$ Ans _____

c) Find the domain of $\frac{f}{g}$ Ans _____

d) Find the range of $f + g$ Ans _____

e) Find the range of $\frac{f}{g}$ Ans _____

2. Let $f(x) = x^2, g(x) = 2x - 3$

a) Find $(f + g)(2) =$ Ans _____

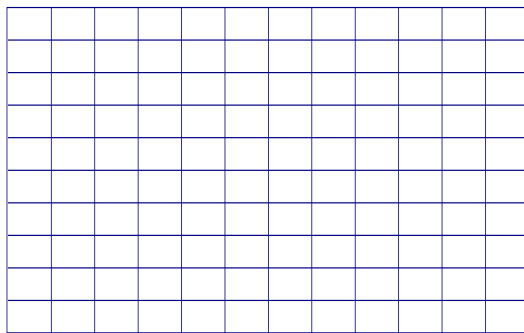
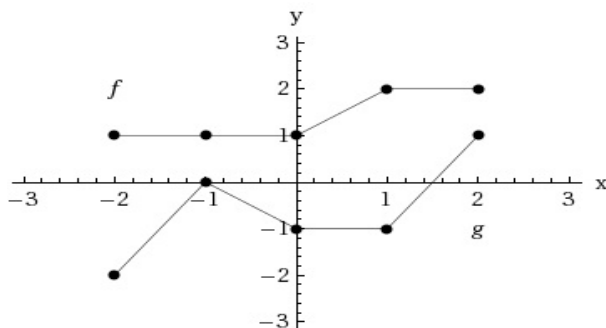
b) Find $(f + g)(x)$ Ans _____

c) Find the domain of $\left(\frac{f}{g}\right)(x)$ Ans _____

d) Find the range of $f + g$ Ans _____

e) Find $\left(\frac{f}{g}\right)(x)$ Ans _____

3. The graphs of f and g are shown above. Produce the graphs of $f + g$ and $f - g$ on the same grid below.



4. $f = \{(1, 2), (2, 3), (3, 3), (4, 5)\}$, $g = \{(1, 1), (2, 3), (3, 2), (4, 8)\}$

a) Find $(f \circ g)(2) =$ Ans _____

b) Find the domain of f . Ans _____

c) Find the range of g . Ans _____

d) Find the domain of $f \circ g$. Ans _____

e) Find $(g \circ f)(x) =$ Ans _____

5. Use the graphs of f and g to find Ans _____

a. Find an expression for $y = f(x)$ _____

b. Find an expression for $y = g(x)$ _____

c. Find an expression for $y = (f \circ g)(x)$ _____

