

Conditions

If $f = (1, 2), (2, 3), (3, 4), (4, 5)$,
 $g = (1, -2), (3, -3), (5, -5)$, and
 $h = (1, 0), (2, 1), (3, 2)$,
find the following and state the domain:

2a. $f + g$

2b. $f - g$

2c. $f * g$

2d. f / g

2e. $g * f * h$

Solution

2a.

$f + g(1) = 2 - 2 = 0, f + g(3) = 4 - 3 = 1, \text{the domain is } 1 \text{ and } 3$

2b.

$f - g(1) = 2 + 2 = 4, f - g(3) = 4 + 3 = 7, \text{the domain is } 1 \text{ and } 3$

2c.

$fg(1) = -4, fg(3) = -12, \text{the domain is } 1 \text{ and } 3$

2d.

$f/g(1) = -1, f/g(3) = -\frac{4}{3}, \text{the domain is } 1 \text{ and } 3$

2e.

$fgh(1) = 0, fgh(3) = -24, \text{the domain is } 1 \text{ and } 3$