

1.7 Functions

$$f(x) = 2x + 3$$

$$g(x) = x - 4$$

$$(f+g)(x) = (2x+3) + (x-4)$$

$$(f+g)(x) = 3x - 1$$

$$(f-g)(x) = (2x+3) - (x-4)$$

$$(f-g)(x) = x + 7$$

$$(fg)(x) = (2x+3)(x-4)$$

$$(fg)(x) = 2x^2 - 8x + 3x - 12$$

$$(fg)(x) = 2x^2 - 5x - 12$$

$$\left(\frac{f}{g}\right)(x) = \frac{2x+3}{x-4}$$

Domain All Reals
except 4
or $x \neq 4$

$$f(x) = 3x - 1$$

$$g(x) = x - 2$$

$$f(4) = 3(4) - 1$$

$$f(4) = 11$$

$$g(4) = 4 - 2$$

$$g(4) = 2$$

$$(f+g)(4) = 11 + 2$$

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

$$(f+g)(x) = 4x - 3$$

$$(f+g)(4) = 4(4) - 3$$

$$(f+g)(4) = 13$$

Composition Function

$$f(x) = x + 5$$

$$g(x) = 2x - 1$$

$$(f \circ g)(x) = (2x - 1) + 5$$

$$(f \circ g)(x) = 2x + 4$$

$$(g \circ f)(x) = 2(x + 5) - 1$$

$$(g \circ f)(x) = 2x + 10 - 1$$

$$(g \circ f)(x) = 2x + 9$$

$$(f \circ f)(x) = (x + 5) + 5$$

$$(f \circ f)(x) = x + 10$$

Find x
 $x + 5$

$2x - 1$

$x + 5$

p81

41. $(f + g)(3)$

