

264

1-2 Composition of Functions

Review State the Domain & Range of the relation $\{(-2, 2), (1, 2), (2, 3)\}$

$$D: \{-2, 1, 2\} \leftarrow x\text{-coord.}$$

$$R: \{2, 3\} \leftarrow y\text{-coord.}$$

This is a fn. because each point in the domain is paired w/ exactly one pt. in the range.

Ex $f(-2)$ if $f(x) = 6 - x^2$ (No repeats in domain)

$$= 6 - (-2)^2$$

$$= 6 - 4$$

$$\underline{f(-2) = 2}$$

Given $f(x) = 2x - 1$ Find $(f+g)(x)$
 $g(x) = x^2$ $f(x) + g(x)$

$$2x - 1 + x^2$$

$$\underline{x^2 + 2x - 1}$$

$(f \cdot g)(x)$

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

$$= \underline{2x^3 - x^2}$$

$$2x \cdot x^2$$

Composition of fn's

$$(f \circ g)(x)$$

→

$$f(g(x))$$

$$f(x) = x^2 - 1$$

$$g(x) = 5x^2$$

$$f(5x^2) = (5x^2)^2 - 1$$

$$= \underline{25x^4 - 1}$$