

MATH 1314

Chapter 1.7: Combinations Of Functions; Composite Functions

DOMAIN:

Find the domain of the functions.

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

$$f(x) = \frac{3x+2}{x+1}$$

$$f(x) = \sqrt{x+3}$$

COMBINATIONS:

Example: $f(x) = 2x$ $g(x) = x - 1$

SUM: $(f+g)(x) = f(x) + g(x)$

DIFFERENCE: $f(x) - g(x)$

PRODUCT: $(f \cdot g)(x) = f(x) \cdot g(x)$

QUOTIENT: $f(x) / g(x)$

$g(x) \neq 0$

Find the domain of $(f + g)(x)$.

$$f(x) = \sqrt{x+3}$$

$$g(x) = \sqrt{x-2}$$

COMPOSITE FUNCTION

$$f(x) = x^2 + x + 5 \quad g(x) = 4x - 1$$

$$f \circ g : f[g(x)]$$

$$g \circ f : g[f(x)]$$

Example: find $f \circ g$. $f(x) = \frac{4}{x}$ $g(x) = \sqrt{x}$