

Math 124, 3.1 Functions

Determine if each rule below defines y as a function of x . (Yes or No)

$$1.) \frac{x \mid 0 \mid 2 \mid 2 \mid 4 \mid 5}{y \mid 1 \mid 3 \mid 5 \mid -2 \mid 12}$$

$$3.) \frac{x \mid -1 \mid 0 \mid 1 \mid 2 \mid 3}{y \mid 3 \mid 4 \mid -1 \mid 3 \mid 6}$$

$$2.) y = x^2 + 5$$

$$4.) y = \pm\sqrt{x - 11}$$

Find the domain of each function. (What is x allowed to be?)

$$7.) f(x) = \sqrt{x + 3}$$

$$8.) f(x) = x^2 + 4x - 6$$

$$9.) f(x) = \frac{x}{x^2 - 4}$$

Find $f(3)$, $f(-2)$, $f(1.7)$, and $f(a + h)$ for each function below.

10.) $f(x) = 2x + 5$

11.) $f(x) = 2$

12.) $f(x) = x^2 + 2x + 4$

Find $f(1)$, $f(2)$, and $f(2.5)$ for the function $f(x) = \begin{cases} 3x + 1 & \text{if } x \geq 2 \\ x^2 & \text{if } x < 2 \end{cases}$