

hw-14b-Domain-and-Range-Functions

Due: 12/13/2015 at 06:00am EST.

Students will be able to:

- Determine Domain of a Function
- Determine Range of a Function

Functions and symbols that WeBWorK understands.

Links to some useful WeBWorK pages for students

1. (1 pt) The domain of the function

$$f(x) = \sqrt{16 - x^2}$$

is the interval

_____, _____,
and its range is

_____, _____.

2. (1 pt) The domain of the function

$$f(x) = \frac{x+4}{x+2}$$

is the set of all real number except

_____ and its range is the set of all numbers except _____.

Hint: To find the domain observe that we can't divide by zero. To find the range solve an equation.

3. (1 pt) Find the domain of each function. Write your answer in **interval notation**.

(a) $f(x) = 5x + 8$

Domain of $f(x)$ is _____.

(b) $g(x) = \sqrt{-(9x+4)}$

Domain of $g(x)$ is _____.

(c) $h(x) = \frac{5x+8}{\sqrt{-(9x+4)}}$

Domain of $h(x)$ is _____.

Note: you want to use **interval notation** in your answers.

4. (1 pt) Find the domain of each function. Write your answer in **interval notation**.

(a) $f(x) = \frac{8x}{x^2 - 64}$

Domain of $f(x)$ is _____.

(b) $g(x) = \frac{8x}{x^2 + 64}$

Domain of $g(x)$ is _____.

Note: you want to use **interval notation** in your answers.

5. (1 pt) Find the domain of each function. Write your answer in **interval notation**.

(a) $f(x) = \frac{4x+8}{8x-2}$

Domain of $f(x)$ is _____.

(b) $g(x) = \frac{8x-2}{4x+8}$

Domain of $g(x)$ is _____.

Note: you want to use **interval notation** in your answers.

6. (1 pt) Find the domain of each function. Write your answer in **interval notation**.

(a) $f(x) = \frac{-4x-3}{x^3-16x}$

Domain of $f(x)$ is _____.

(b) $g(x) = \frac{-4x-3}{x^3+16x}$

Domain of $g(x)$ is _____.

Note: you want to use **interval notation** in your answers.

7. (1 pt) Let the function f be defined by $f(x) = \frac{1}{\sqrt{1-x^2}}$. Indicate whether the following statements are True (T) or False (F). You must get all answers correct in order to receive credit.

- ___1. 1 is in the domain of f
- ___2. $f(x)$ is never positive.
- ___3. All positive real numbers are in the domain of f
- ___4. 0 is in the domain of f
- ___5. $f(x)$ is never negative.
- ___6. All negative real numbers are in the domain of f
- ___7. $f(x)$ is never zero.

Hint: Draw the graph of f .

8. (1 pt) The domain of the function

$$f(x) = \frac{\sqrt{4-x^2}}{\sqrt{1-x^2}}$$

is the interval

_____, _____.

Hint: Both radicands must be non-negative, and we can't divide by zero.