

Review Exercise Set 16

Exercise 1: State the domain and range for the following function.

$$g(x) = -3\sqrt[3]{x}$$

Exercise 2: State the domain and range for the following function.

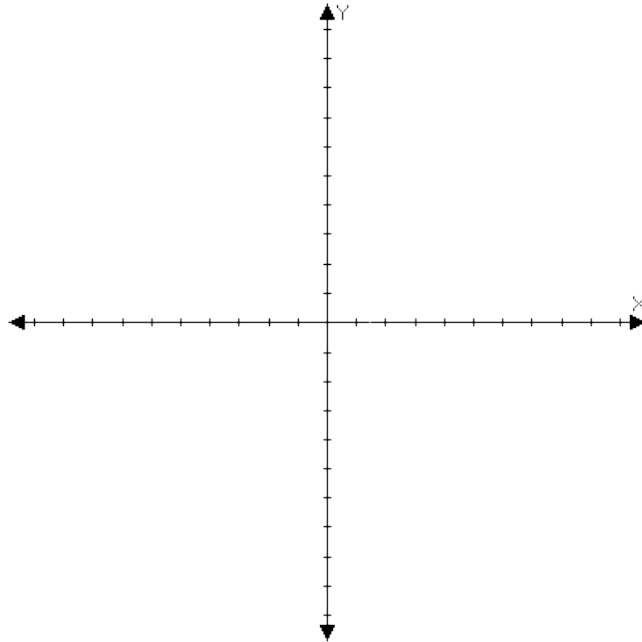
$$h(x) = |x - 2| + 3$$

Exercise 3: State the domain and range for the following function.

$$f(x) = \frac{2}{x+1} - 5$$

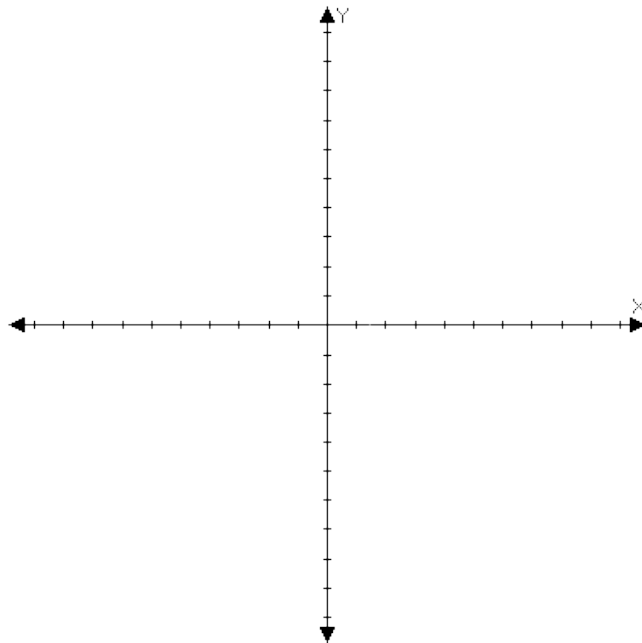
Exercise 4: Starting with the graph of $f(x) = 1/x$, use the technique of reflection to graph:

$$f(x) = \frac{1}{x-3} + 4$$



Exercise 5: Starting with the graph of $f(x) = x^3$, use the technique of reflection to graph:

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



Review Exercise Set 16 Answer Key

Exercise 1: State the domain and range for the following function.

$$g(x) = -3\sqrt[3]{x}$$

The cube root of x is defined for all real numbers. Multiplying it by negative three will not change the domain or range.

Domain: All real numbers

Range: All real numbers

Exercise 2: State the domain and range for the following function.

$$h(x) = |x - 2| + 3$$

The absolute value of x has a domain of all real numbers but the range must be greater than or equal to zero. The horizontal shift will not affect the domain or range but the vertical shift will change the range. The range must now be greater than or equal to three.

Domain: All real numbers

Range: All real numbers greater than or equal to 3

Exercise 3: State the domain and range for the following function.

$$f(x) = \frac{2}{x+1} - 5$$

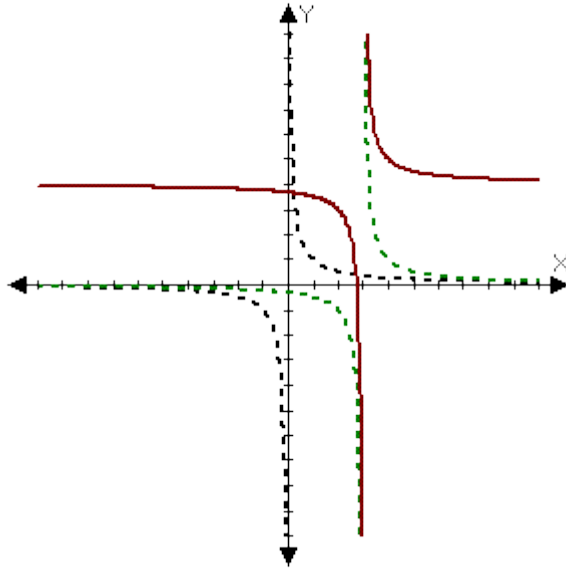
The reciprocal function of $1/x$ has a domain and range of all real numbers except zero. The horizontal shift in the denominator of the fraction will change the domain to be all real numbers except -1 . The vertical shift will change the range to where it can be all real numbers except for -5 .

Domain: All real numbers except for -1

Range: All real numbers except for -5

Exercise 4: Starting with the graph of $f(x) = 1/x$, use the technique of reflection to graph:

$$f(x) = \frac{1}{x-3} + 4$$



Exercise 5: Starting with the graph of $f(x) = x^3$, use the technique of reflection to graph:

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

