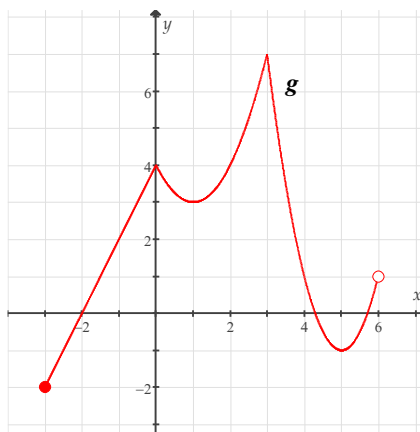**Name:** _____

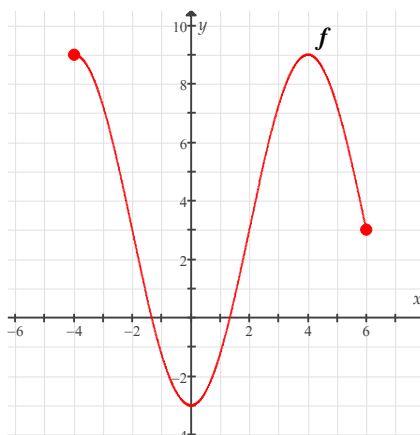# Domain and Range of Functions

1)   The graph of $y = g(x)$ is shown below.

   1) Find the domain of the function. Write your answer in interval notation.
   2) Find the range of the function. Write your answer in interval notation.
   3) Find the following function values:

$$g(-2); \ g(0); \ g(1); \ g(3); \ g(6)$$

   4) For what value(s) of *x* is $g(x) = -2$?

2)   The graph of $y = f(x)$ is shown below.

   1) Find the domain of the function. Write your answer in interval notation.
   2) Find the range of the function. Write your answer in interval notation.
   3) Find the following function values:

$$f(-2); \ f(0); \ f(4); \ f(6)$$

   4) For what value(s) of *x* is $f(x) = 9$?

3) Find the domain and the range of each of the following functions. Write the domain and the range first as an inequality, and then express it in interval notation.

1) $f(x) = \dfrac{1}{x-4}$

2) $f(x) = -\dfrac{4x-5}{x-2}$

3) $f(x) = \dfrac{5x-3}{x-3}$

4) $f(x) = \dfrac{5x^2-3}{x^2-1}$

5) $f(x) = \dfrac{x^2-121}{x^2-100}$

6) $f(x) = \dfrac{x^2}{x^2-81}$

7) $f(x) = \dfrac{x^3-27}{x^3-1}$

8) $f(x) = \dfrac{x^3-8}{x^3-4}$

9) $f(x) = \sqrt{\dfrac{x-2}{x-1}}$

10) $f(x) = \sqrt{\dfrac{x+3}{x+1}}$

11) $f(t) = \sqrt{t^2-1}$

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

13) $h(x) = \sqrt[3]{x+4}$

14) $g(x) = \sqrt[3]{4x-2}$

15) $h(t) = \sqrt{(t-1)(t-4)}$

16) $g(x) = \dfrac{\sqrt{2x-1}}{\sqrt{x-1}}$

17) $f(x) = |x+1|$

18) $f(x) = |3x-5|$

19) $f(x) = \dfrac{|x+1|}{|x-1|}$

20) $f(x) = \dfrac{|2x-4|}{|x-3|}$