Last Name, First Name	Discussion Section	Student ID

Worksheet 3 ● Interpreting Graphical Information

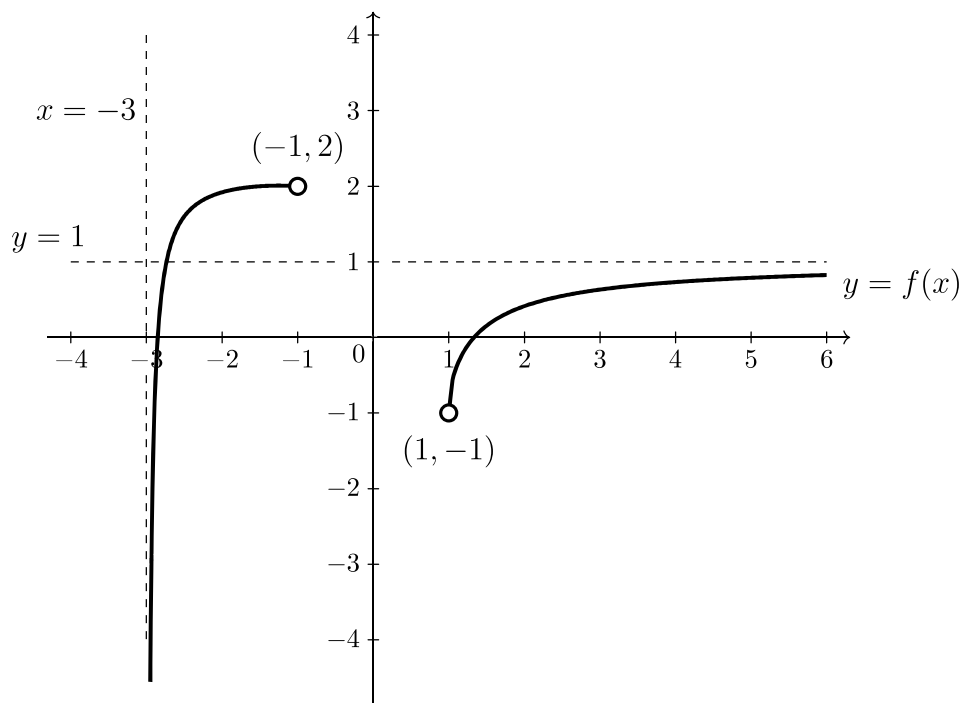A sketch of the graph of the function f is given below (Figure 1). Refer to it for Problems 1–4.

Figure 1

1. Find two points in the domain of f and two points not in the domain of f.
2. Find two points in the range of f and two points not in the range of f.
3. Graph on a real number line the domain of f.
4. Graph on a real number line the range of f.

A sketch of the graph of the function g is given below (Figure 2). Refer to it for Problem 5.
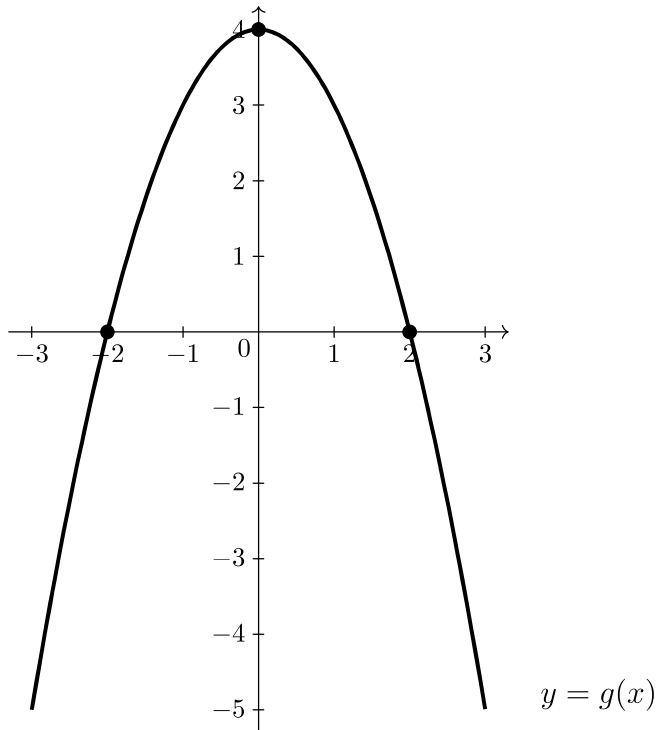

Figure 2

5. Let g be the function given by $g(x) = 4 - x^2$. A sketch of the graph of g is given above (Figure 2). Find the coordinates for the three unlabeled points marked on g. Graph on a number line the set of all x with

(a) $g(x) > 0$,

(b) $g(x) \geq 0$,

(c) $g(x) < 0$,

(d) $g(x) \leq 0$.

(e) Graph on a number line the range of g.

(f) Where is g increasing and where is it decreasing? Where is g strictly increasing and where is it strictly decreasing?

A sketch of the graph of the function f is given below (Figure 3). Refer to it for Problem 6.
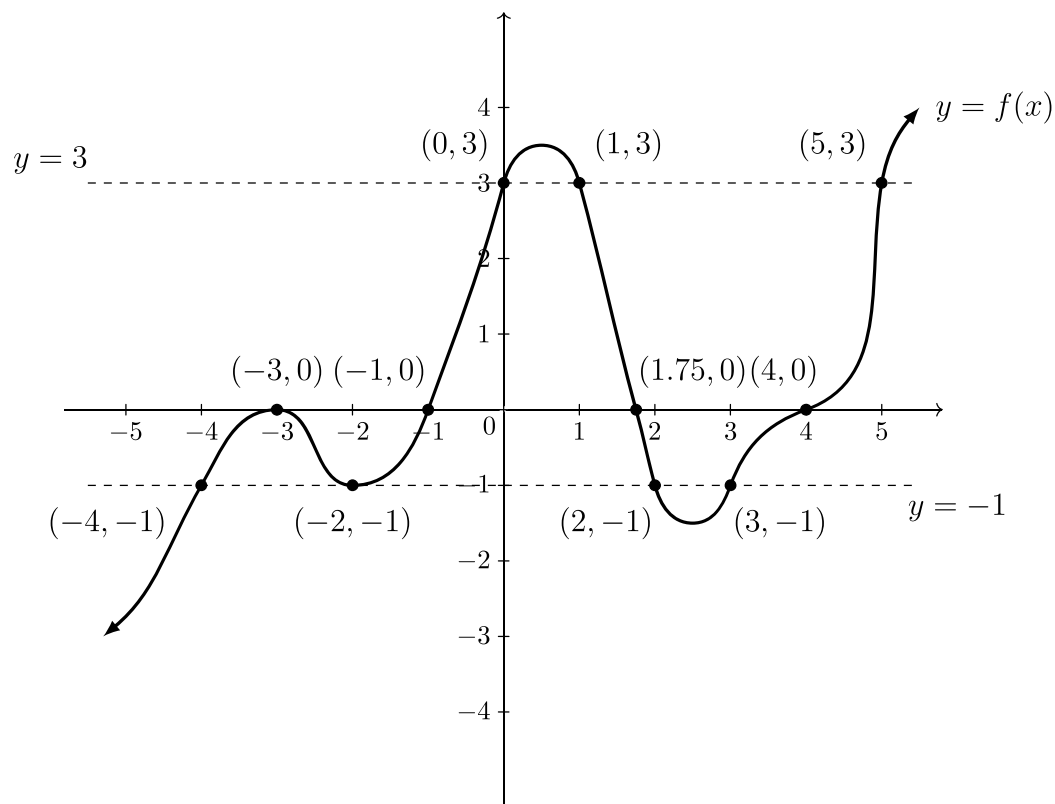
Figure 3

6. Graph on a number line the set of all x with

(a) $f(x) > 3$,

(b) $f(x) \geq -1$,

(c) $f(x) \leq 3$,

(d) $f(x) < -1$.

7. Let g be the function given by

$$g(x) = \frac{(x+3)(x-2)(x-4)^3}{(x-3)(x+5)^2}.$$

Use Desmos to sketch the graph of the function. Graph on a number line the set of all x with

(a) $g(x) > 0$,

(b) $g(x) \geq 0$,

(c) $g(x) < 0$,

(d) $g(x) \leq 0$.

If you did not have a way to sketch the graph of the function, how else might you solve this problem?