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### Worksheet 3 • Interpreting Graphical Information

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

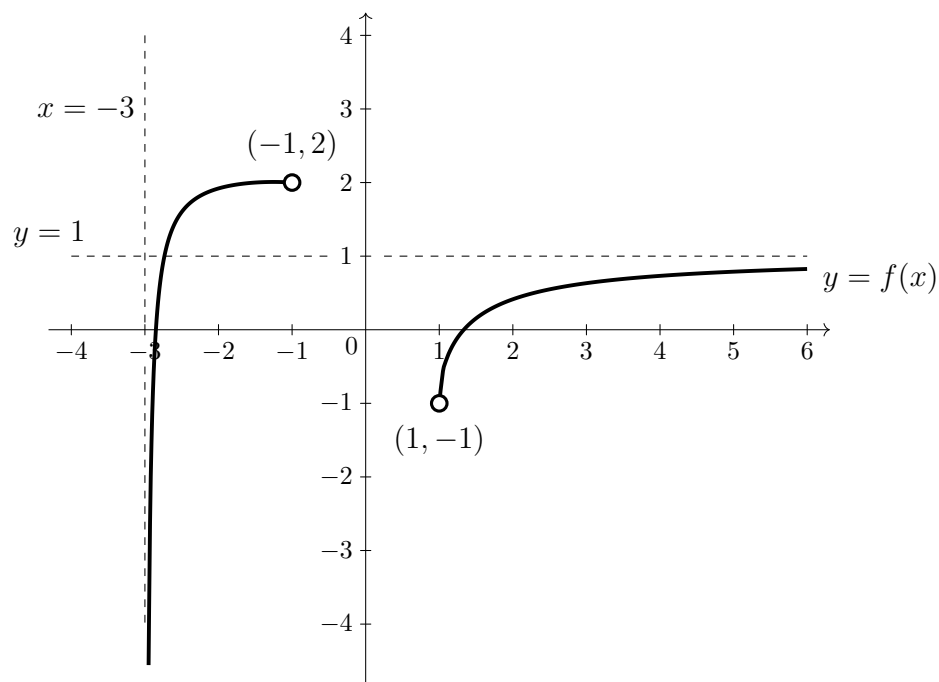


Figure 1

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  $f$ .

The graph of the function  $a$  is given below (Figure 2). Refer to it for Problem 5.

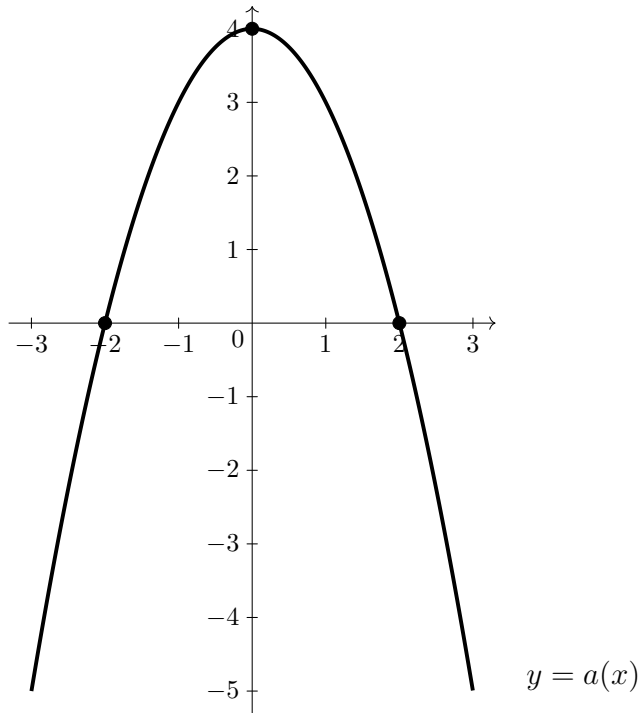


Figure 2

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

- (a)  $a(x) > 0$ ,
- (b)  $a(x) \geq 0$ ,
- (c)  $a(x) < 0$ ,
- (d)  $a(x) \leq 0$ .
- (e) Graph on a number line the range of  $a$ .

The graph of the function  $g$  is given below (Figure 3). Refer to it for Problem 6.

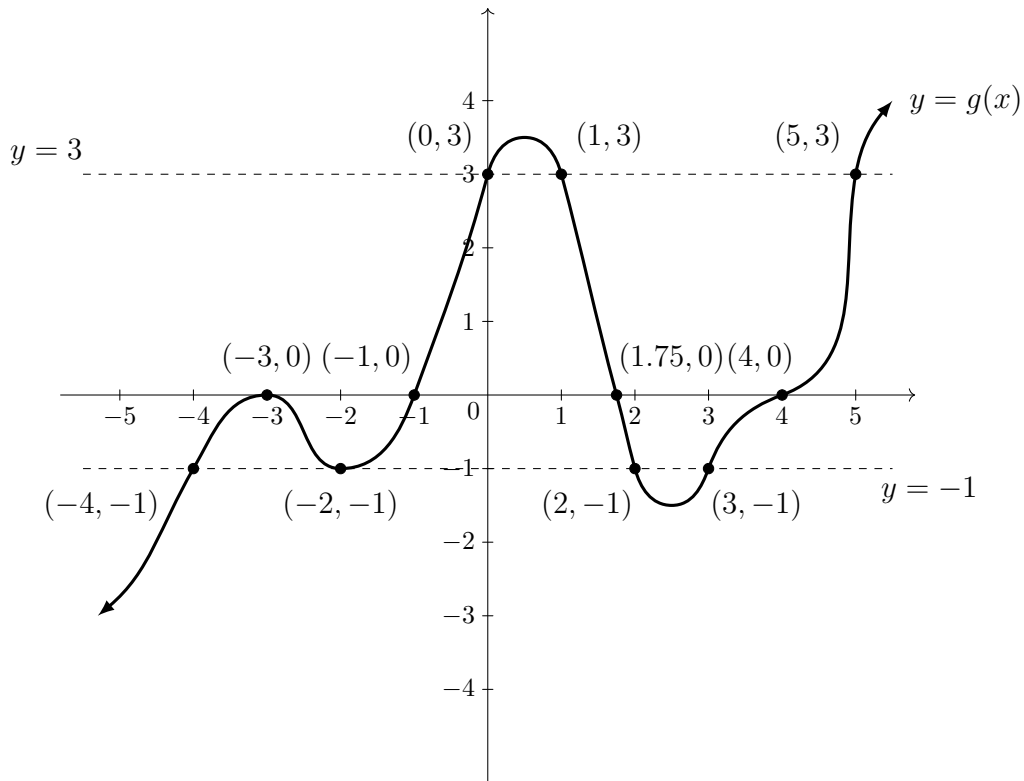


Figure 3

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

- (a)  $g(x) > 3$ ,
- (b)  $g(x) \geq -1$ ,
- (c)  $g(x) \leq 3$ ,
- (d)  $g(x) < -1$ .

7. Let  $b$  be the function given by

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

Use a computer or calculator to graph the function. Graph on a number line the set of all  $x$  with

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

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

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

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

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