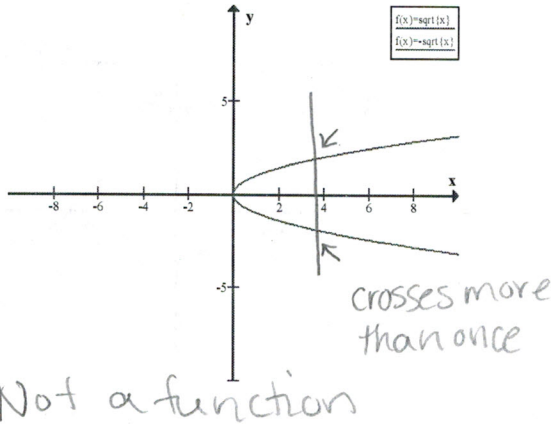


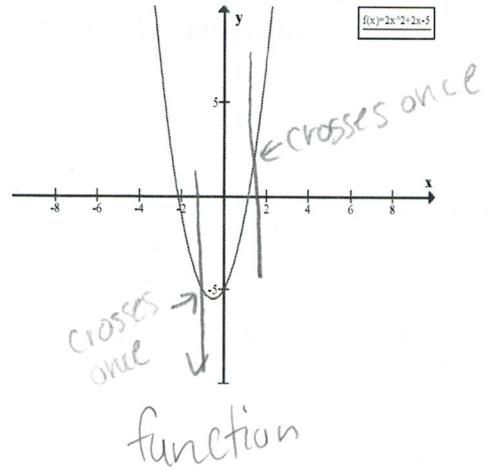
3.2 Practice Problems

1. Determine if the following graphs represent functions.

a.

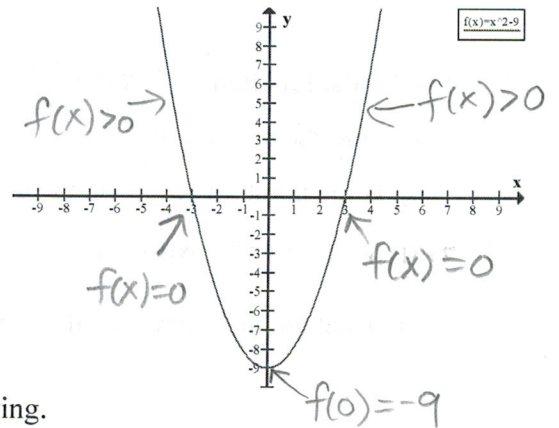


b.



2. Find the domain and range of the function using its graph.

Domain $(-\infty, \infty)$
 Range $[-9, \infty)$



3. If the graph in problem 2 is named $f(x)$ find the following.

- $f(0)$
- For what values of x does $f(x) = 0$?
- For what values of x is $f(x) > 0$?

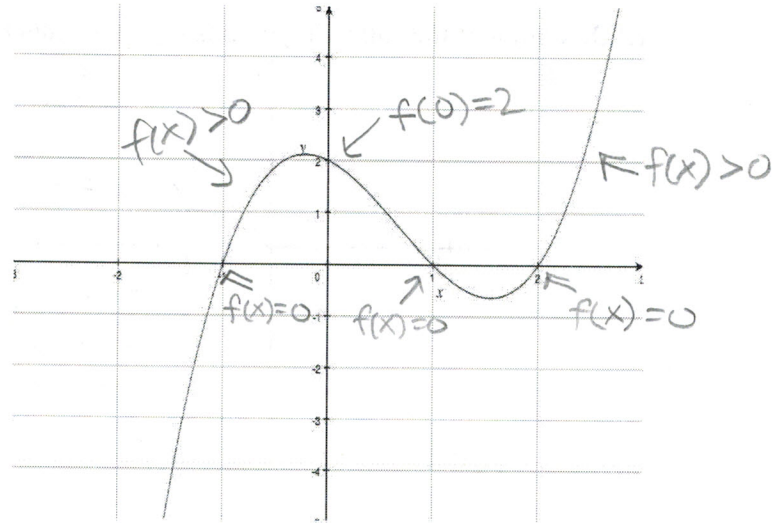
a) $f(0) = -9$

b) $x = 3, -3$

c) $(-\infty, -3) \cup (3, \infty)$

3. If the graph is named $f(x)$ find the following.

- $f(0)$
- For what values of x does $f(x)=0$?
- For what values of x is $f(x)>0$?



a) $f(0) = 2$

b) $x = -1, 1, 2$

c) $(-1, 1) \cup (2, \infty)$

4. Consider the function: $f(x) = \frac{x+2}{x+3}$

- Find the domain of f .
- Is the point $(1, \frac{1}{2})$ on the graph of f ?
- If $f(x)=2$, what is x ?
- What are the intercepts of the graph of f (if any)?

a) $x+3=0$
 $-3 \quad -3$
 $x = -3$

Domain

$\{x \mid x \neq -3\}$

or

$(-\infty, -3) \cup (-3, \infty)$

b) $f(1) = \frac{1+2}{1+3}$
 $= \frac{3}{4}$

$(1, \frac{3}{4})$ is on the graph

$(1, \frac{1}{2})$ is not on the graph

c) $2 = \frac{x+2}{x+3}$

$2(x+3) = x+2$

$2x+6 = x+2$

$-x \quad -x$

$x+6 = 2$

$-6 \quad -6$

$x = -4$

d) $x\text{-int } y=0$

$0 = \frac{x+2}{x+3}$

$0 = x+2$

$-2 = x$

$(-2, 0)$

$y\text{-int}$

$f(0) = \frac{0+2}{0+3}$

$f(0) = \frac{2}{3}$

$(0, \frac{2}{3})$