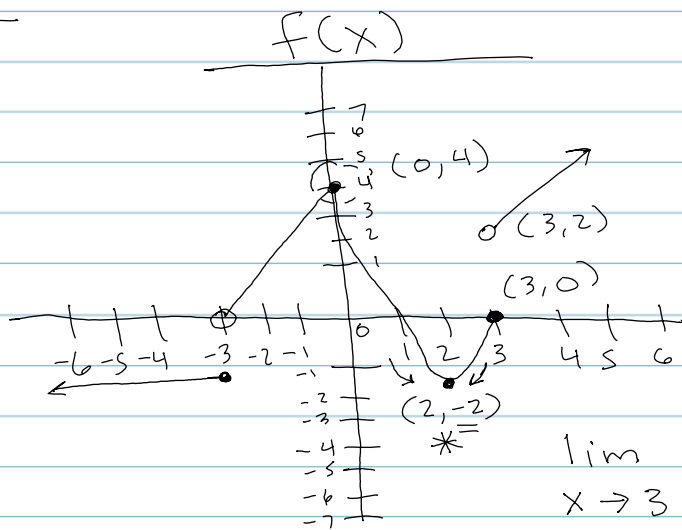


Section 3.1

Limits



$$\lim_{x \rightarrow 3} f(x) \neq 2$$

($0 \neq 2$)

$$\lim_{x \rightarrow 3} -f(x) = 0$$

$$\lim_{x \rightarrow 3} +f(x) = 2$$

$$\lim_{x \rightarrow 0^+} f(x) = 4$$

$$\lim_{x \rightarrow 0^-} f(x) = 4$$

$$\lim_{x \rightarrow 0} f(x) = 4$$

* $\lim_{x \rightarrow 2^-} f(x) = -2$

$$\lim_{x \rightarrow 2^+} f(x) = -2$$

Thus, $\lim_{x \rightarrow 2} f(x) = -2$

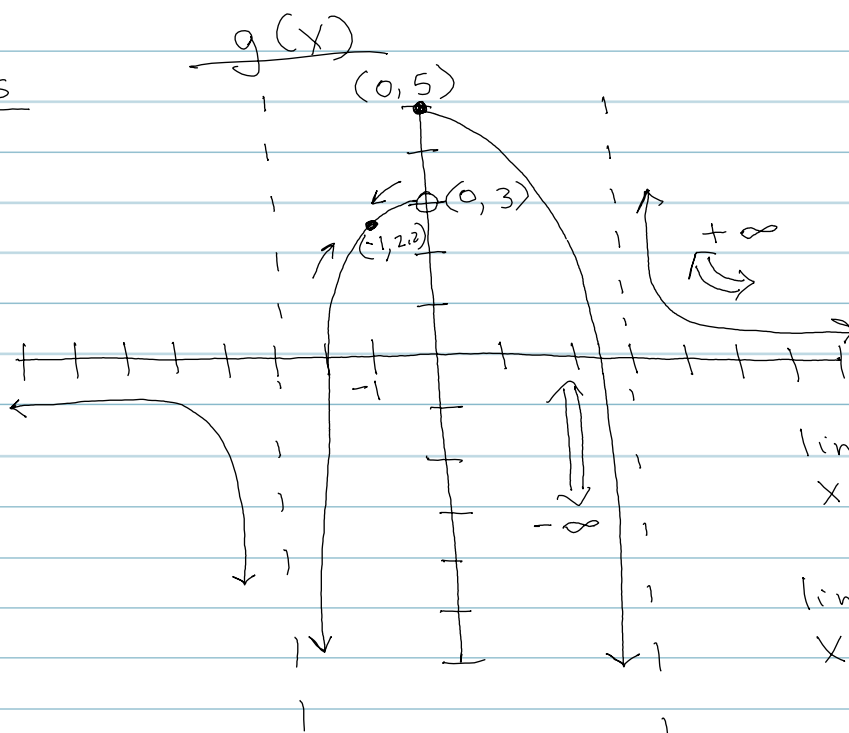
$$\lim_{x \rightarrow -3} -f(x) = -2$$

$$\lim_{x \rightarrow -3} +f(x) = 0$$

$$\lim_{x \rightarrow -3} f(x) = \text{D.N.E}$$

($0 \neq -2$)

Limits



$$\lim_{x \rightarrow \infty} g(x) = 0$$

$$\lim_{x \rightarrow -\infty} g(x) = 0$$

$$\lim_{x \rightarrow -1^+} g(x) = 2.2$$

$$\lim_{x \rightarrow 0^-} g(x) = 3$$

$$\lim_{x \rightarrow -1^-} g(x) = 2.2$$

$$\lim_{x \rightarrow 0^+} g(x) = 5$$

$(3 \neq 5)$

$$\lim_{x \rightarrow -1} g(x) = 2.2$$

$$\lim_{x \rightarrow 0} g(x) = \text{D.N.E}$$

$$\lim_{x \rightarrow 3^-} g(x) = -\infty$$

$$\lim_{x \rightarrow -3^+} g(x) = -\infty$$

$$\lim_{x \rightarrow 3^+} g(x) = +\infty$$

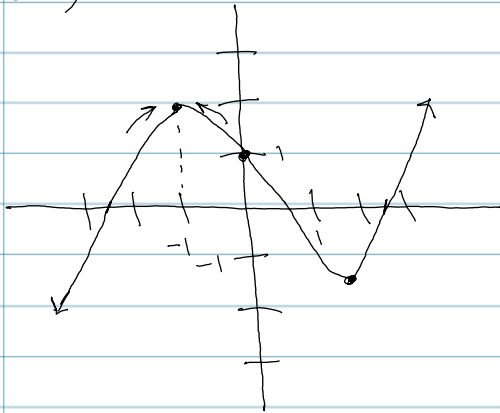
$$\lim_{x \rightarrow -3^-} g(x) = -\infty$$

$$\lim_{x \rightarrow 3} g(x) = \text{D.N.E}$$

$$\lim_{x \rightarrow -3} g(x) = -\infty$$

Section 3.1 Exercises

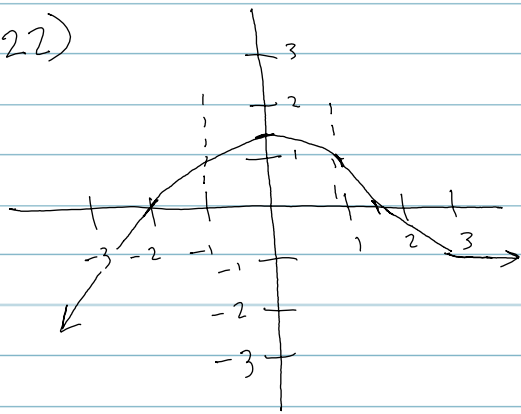
20)



$$\lim_{x \rightarrow -1} f(x) = 2$$

$$\lim_{x \rightarrow 1} f(x) = -1$$

22)



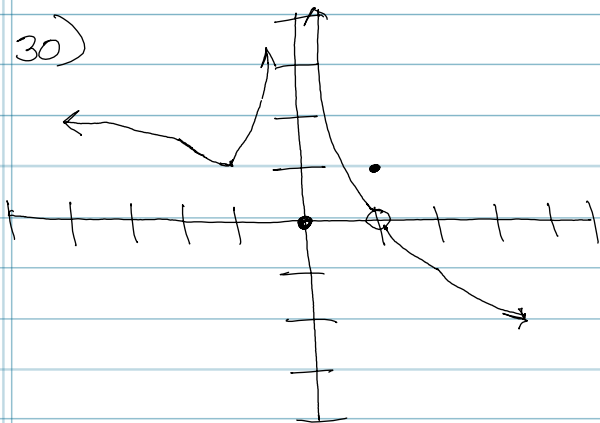
a. $\lim_{x \rightarrow -1} f(x) = 1$

b. $\lim_{x \rightarrow 1} f(x) = 1$

c. $\lim_{x \rightarrow +\infty} f(x) = -\infty$

d. $\lim_{x \rightarrow -\infty} f(x) = -\infty$

30)



a. $\lim_{x \rightarrow 0^-} f(x) = +\infty$

b. $\lim_{x \rightarrow 1^+} f(x) = 0$

c. $\lim_{x \rightarrow 0} f(x) = \infty$

d. $\lim_{x \rightarrow 1} f(x) = 0$

e. $f(0) = 0$

f. $f(1) = 1$