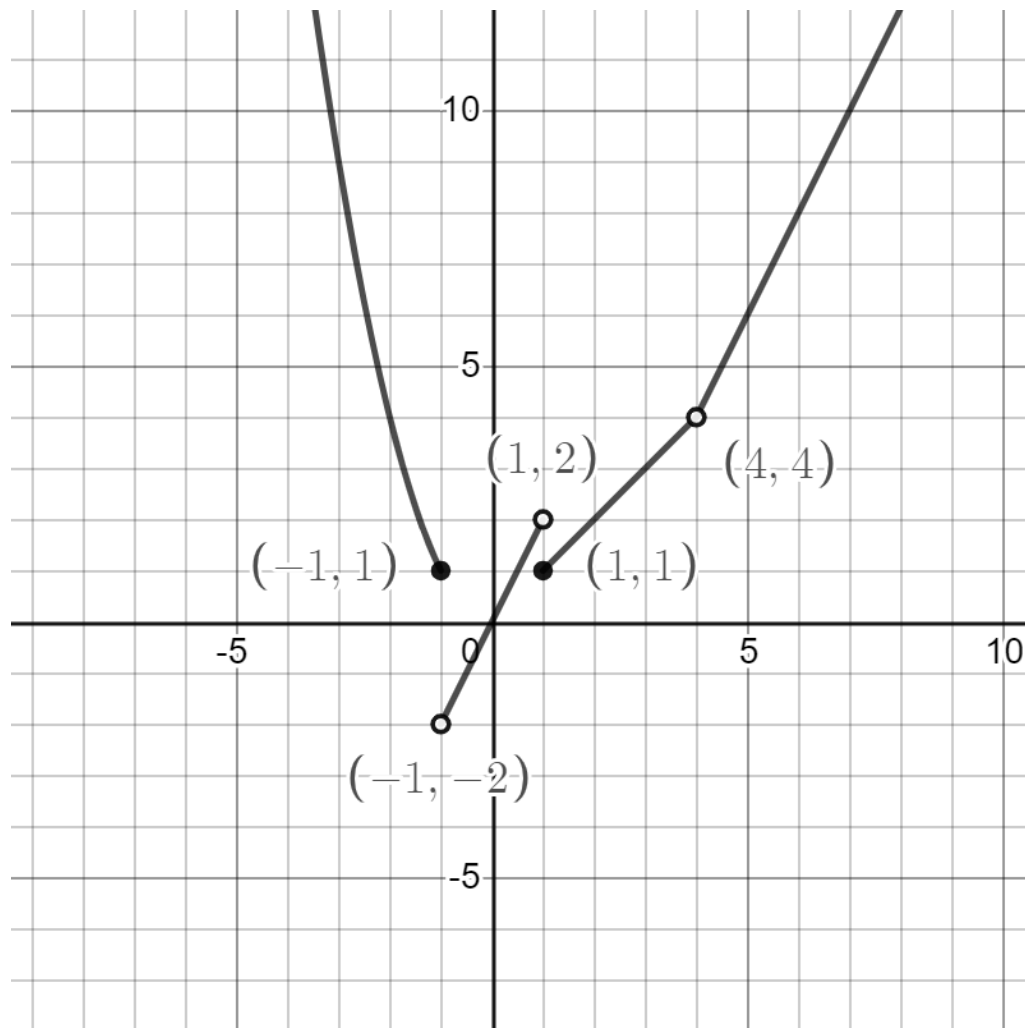


Section 1.1 Limits (minimum homework: 1.1 1-11 odds, 15, 19 and 21)

(minimum homework: 1.1 1-11 odds, 15, 19 and 21)

1) Below is a graph of the function $f(x)$.



Find the following

a) $f(1)$

b) $f(-1)$

c) $f(4)$

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

e) $\lim_{x \rightarrow 1^+} f(x)$

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

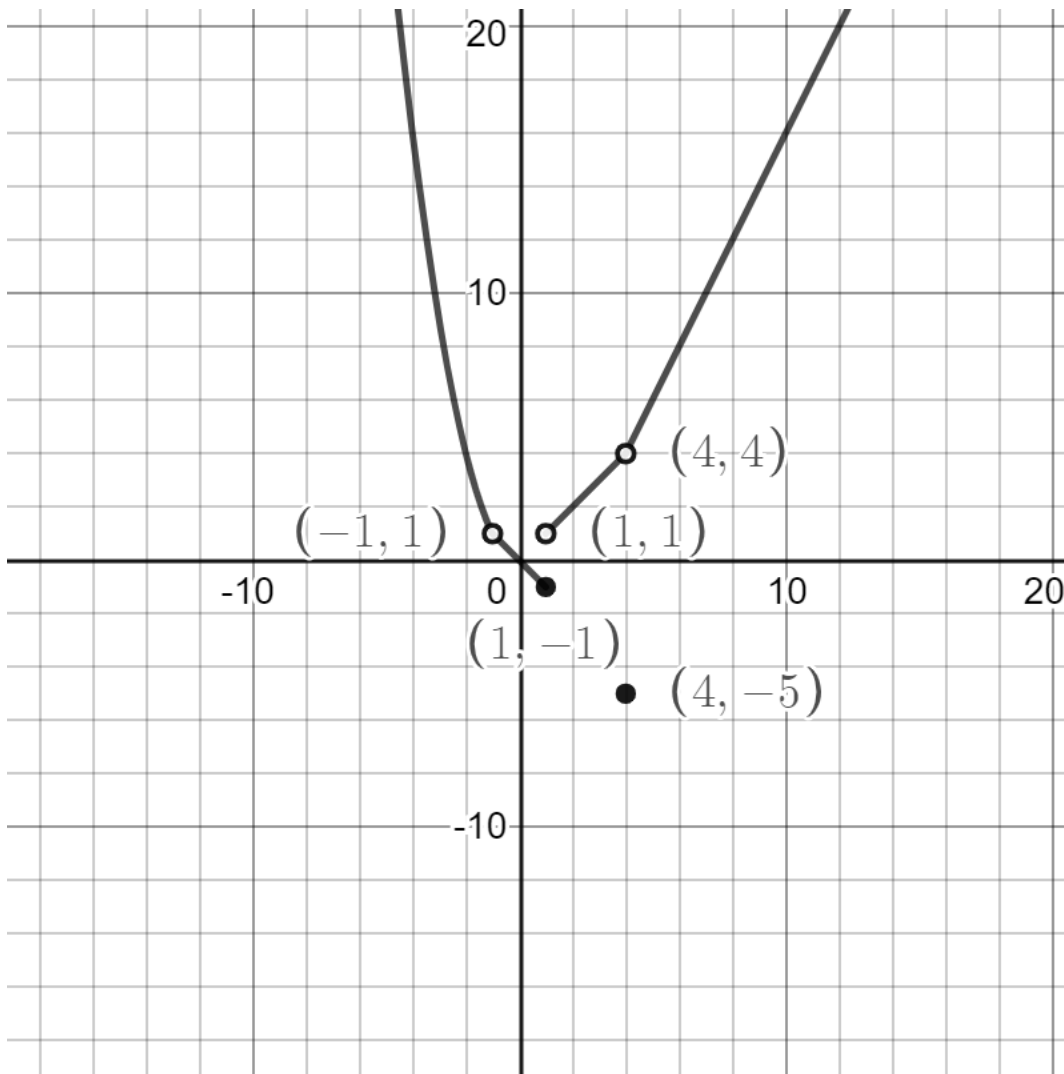
g) $\lim_{x \rightarrow 4^-} f(x)$

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

i) $\lim_{x \rightarrow 4} f(x)$

(minimum homework: 1.1 1-11 odds, 15, 19 and 21)

2) Below is a graph of the function $f(x)$.



Find the following:

a) $f(1)$

b) $f(-1)$

c) $f(4)$

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

e) $\lim_{x \rightarrow 1^+} f(x)$

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

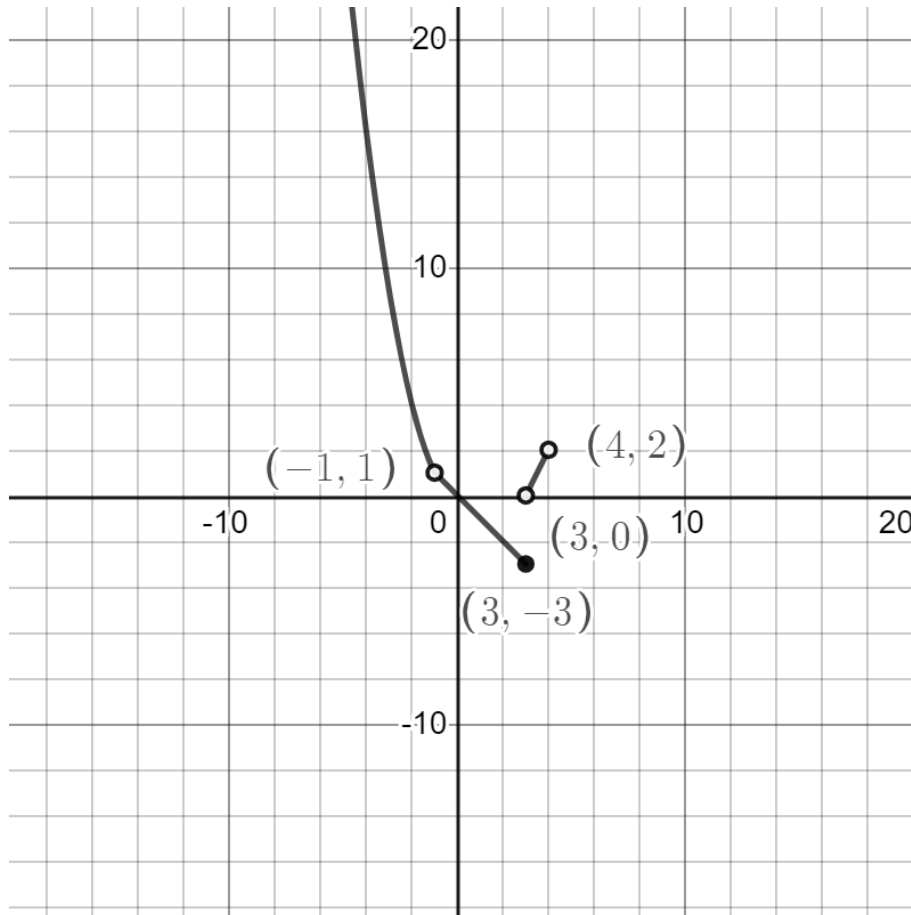
g) $\lim_{x \rightarrow 4^-} f(x)$

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

i) $\lim_{x \rightarrow 4} f(x)$

(minimum homework: 1.1 1-11 odds, 15, 19 and 21)

3) Below is a graph of the function $f(x)$.



Find the following

a) $f(3)$

b) $f(4)$

c) $f(-1)$

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

e) $\lim_{x \rightarrow -1^+} f(x)$

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

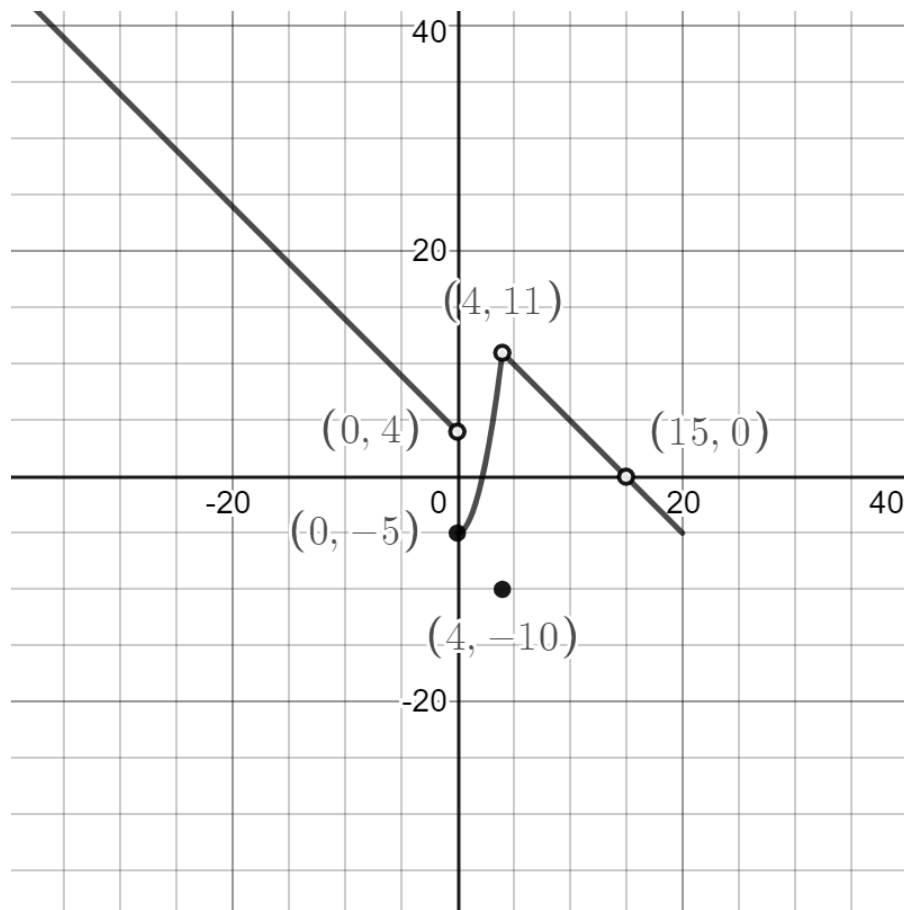
g) $\lim_{x \rightarrow 3^-} f(x)$

h) $\lim_{x \rightarrow 3^+} f(x)$

i) $\lim_{x \rightarrow 3} f(x)$

(minimum homework: 1.1 1-11 odds, 15, 19 and 21)

4) Below is the graph of a function $y = f(x)$.



Find the following

a) $f(0)$

b) $f(4)$

c) $f(15)$

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

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

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

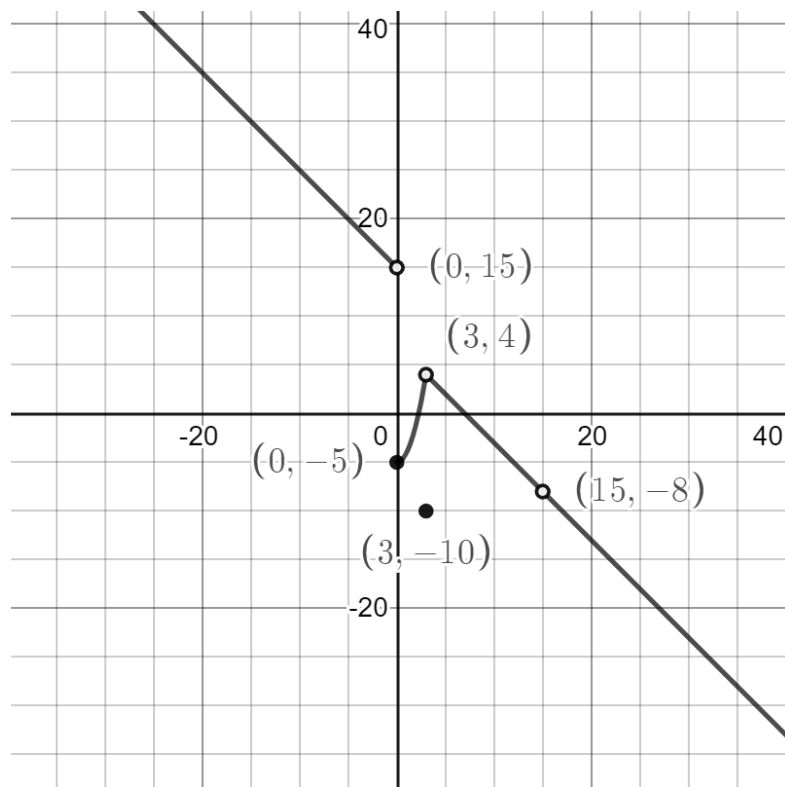
g) $\lim_{x \rightarrow 0^-} f(x)$

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

i) $\lim_{x \rightarrow 0} f(x)$

(minimum homework: 1.1 1-11 odds, 15, 19 and 21)

5) Below is a graph of the function $f(x)$.



Find the following:

a) $f(0)$

b) $f(3)$

c) $f(15)$

d) $\lim_{x \rightarrow 3^-} f(x)$

e) $\lim_{x \rightarrow 3^+} f(x)$

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

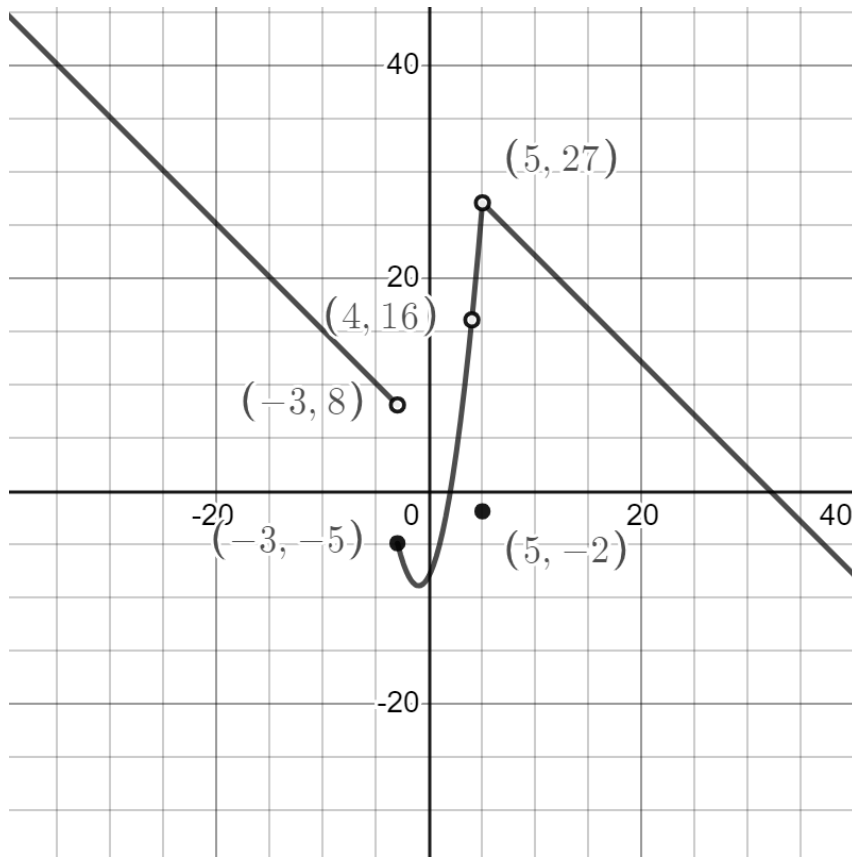
g) $\lim_{x \rightarrow 0^-} f(x)$

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

i) $\lim_{x \rightarrow 0} f(x)$

(minimum homework: 1.1 1-11 odds, 15, 19 and 21)

6) Below is a graph of the function $f(x)$.



Find the following:

a) $f(5)$

b) $f(-3)$

c) $f(4)$

d) $\lim_{x \rightarrow -3^-} f(x)$

e) $\lim_{x \rightarrow -3^+} f(x)$

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

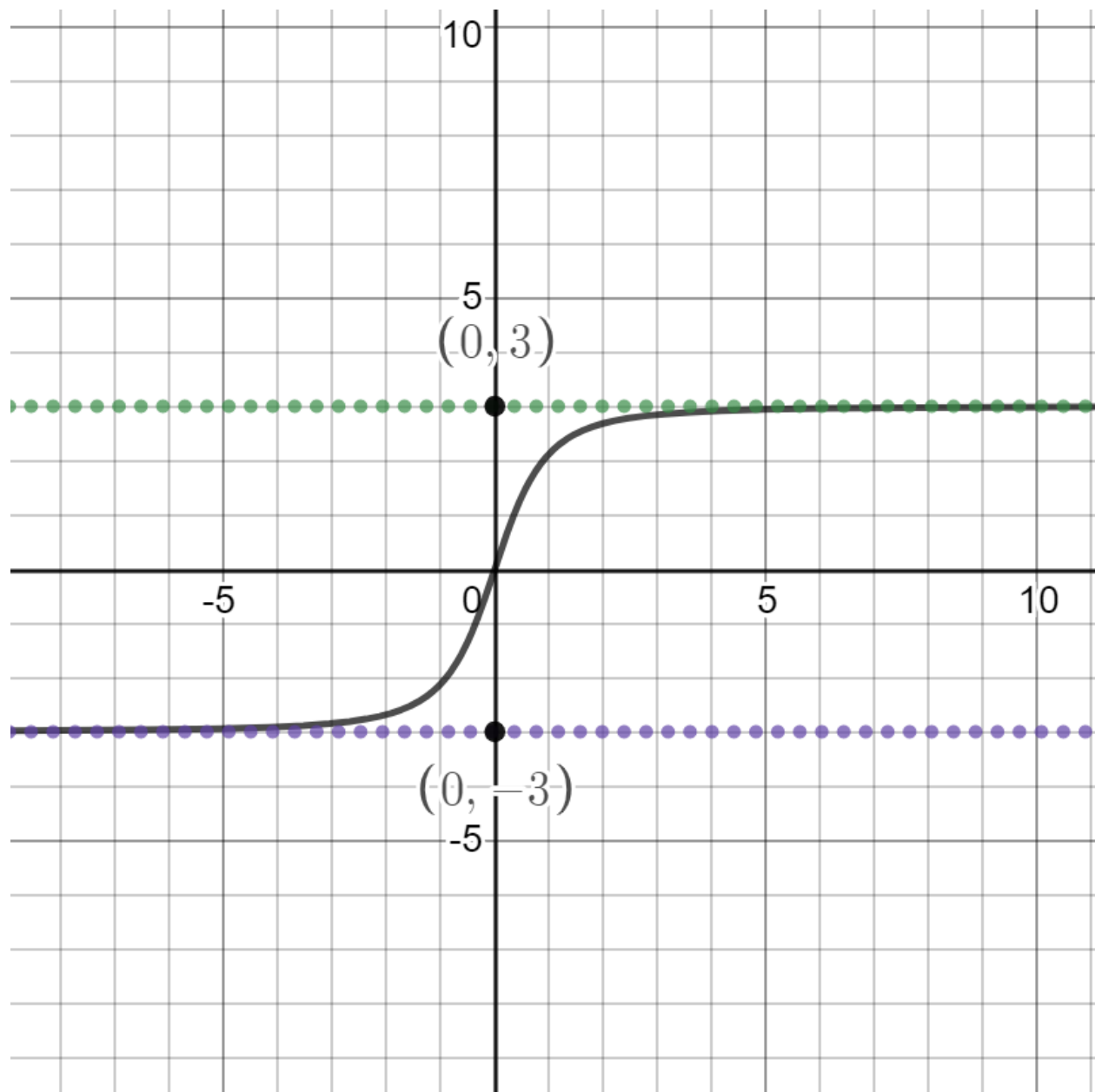
g) $\lim_{x \rightarrow 5^-} f(x)$

h) $\lim_{x \rightarrow 5^+} f(x)$

i) $\lim_{x \rightarrow 5} f(x)$

(minimum homework: 1.1 1-11 odds, 15, 19 and 21)

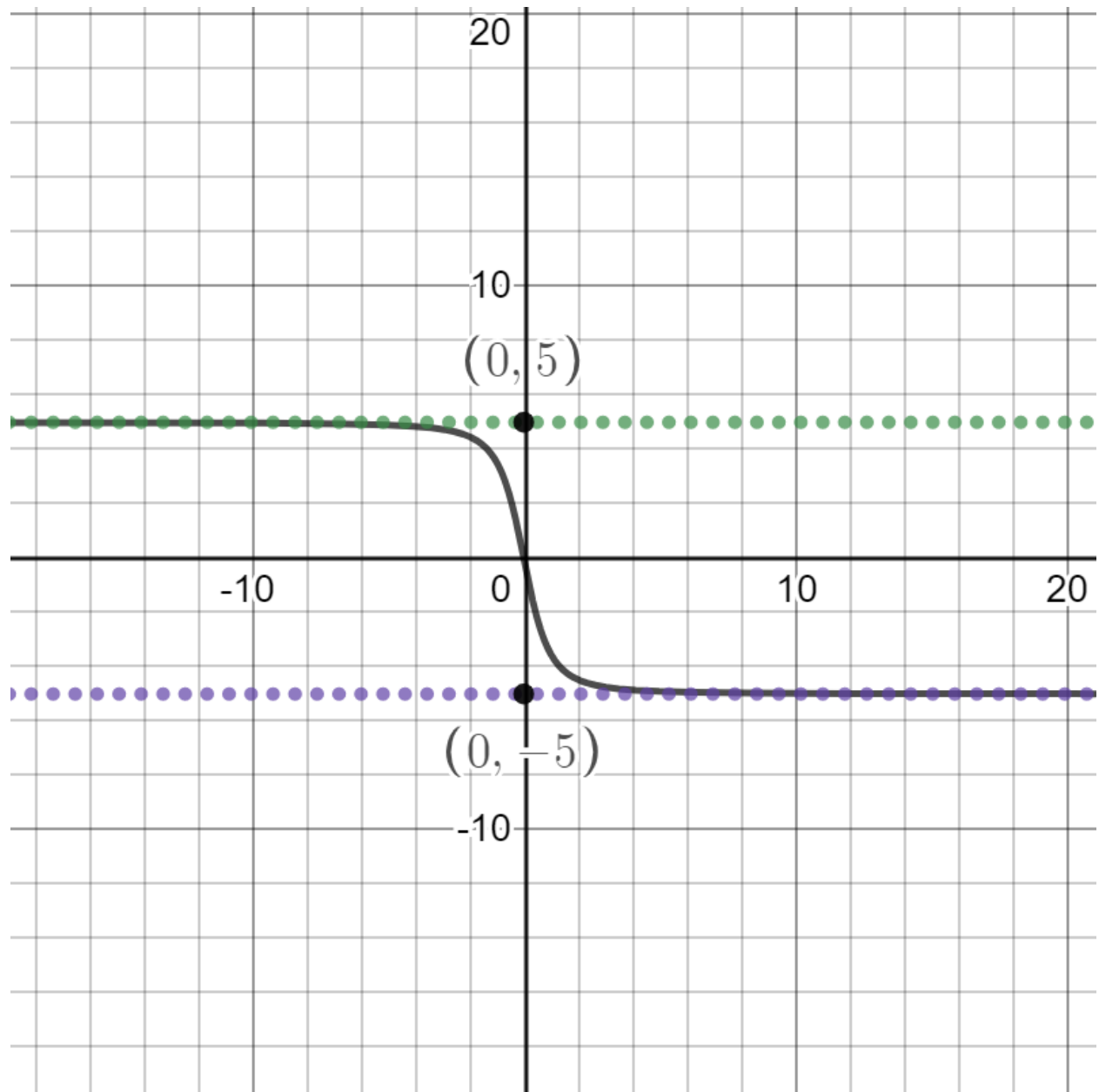
7) Below is a graph of the function $f(x)$. Find the value of each limit (if it exists)



a) $\lim_{x \rightarrow \infty} f(x)$

b) $\lim_{x \rightarrow -\infty} f(x)$

8) Below is a graph of the function $f(x)$. Find the value of each limit (if it exists)

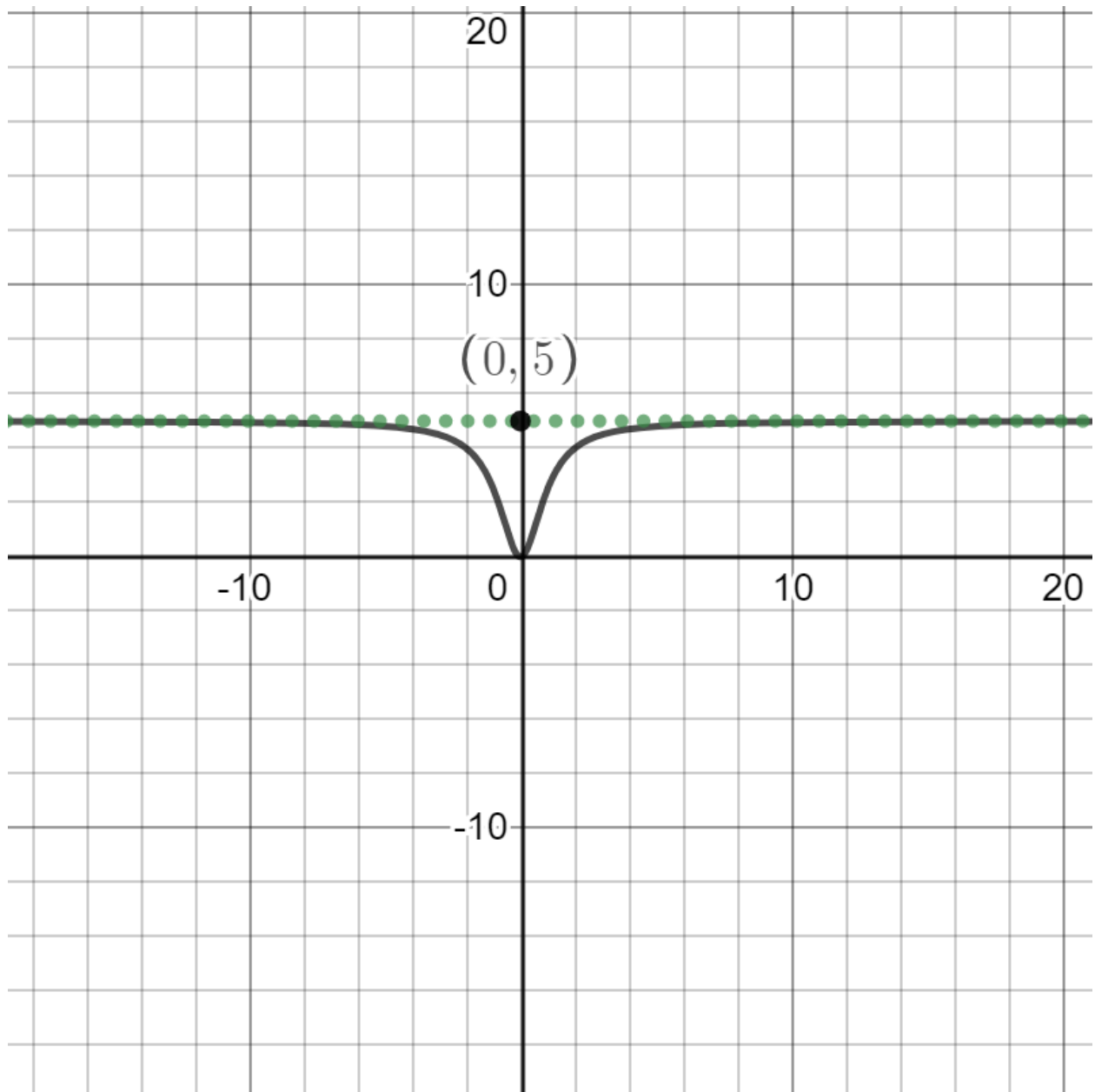


a) $\lim_{x \rightarrow \infty} f(x)$

b) $\lim_{x \rightarrow -\infty} f(x)$

(minimum homework: 1.1 1-11 odds, 15, 19 and 21)

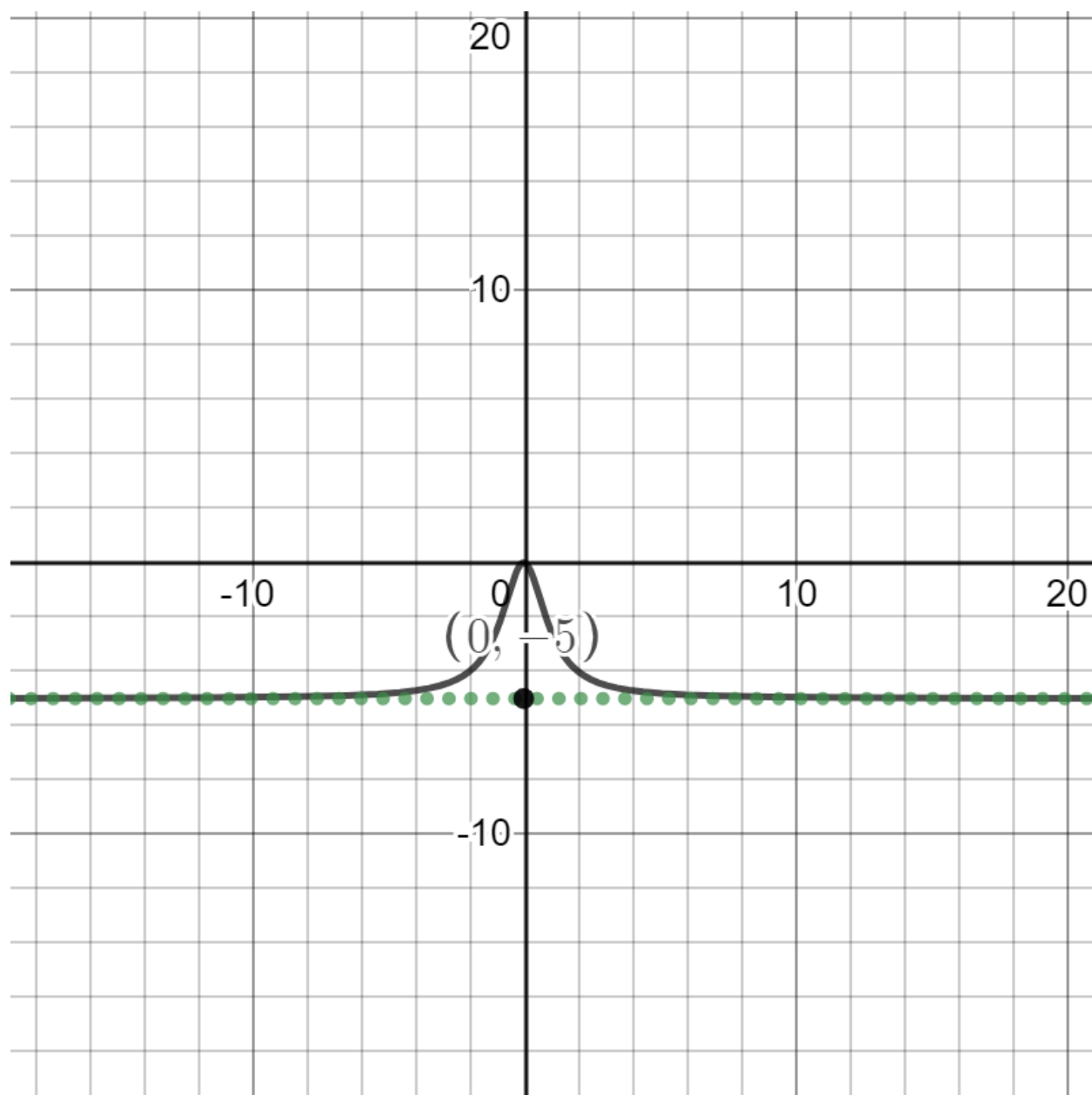
9) Below is a graph of the function $f(x)$. Find the value of each limit (if it exists)



a) $\lim_{x \rightarrow \infty} f(x)$

b) $\lim_{x \rightarrow -\infty} f(x)$

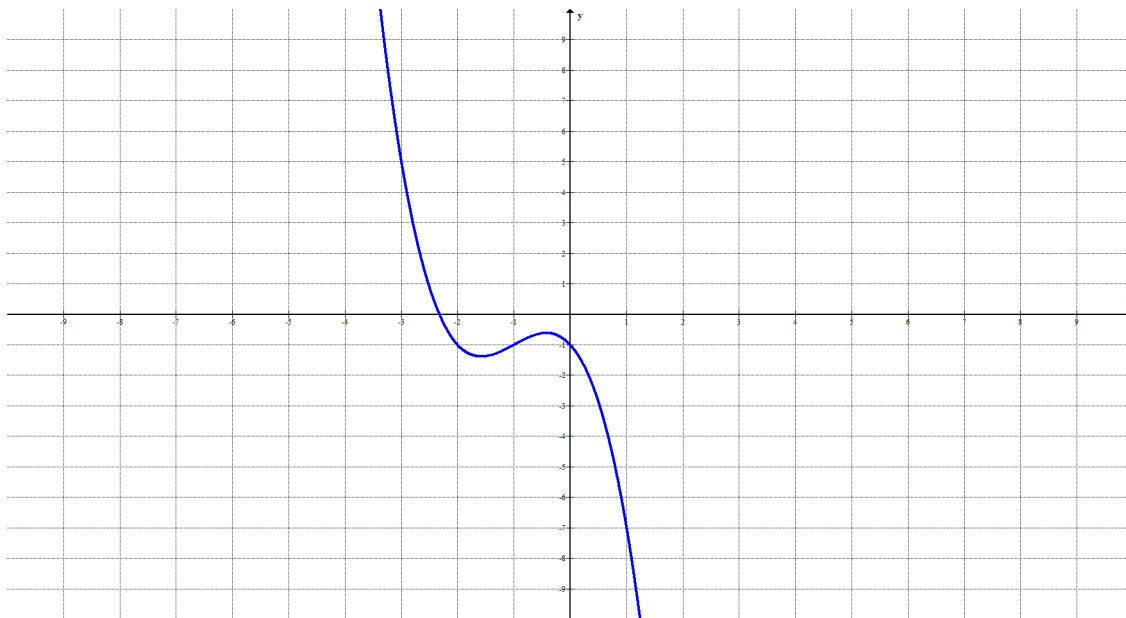
10) Below is a graph of the function $f(x)$. Find the value of each limit (if it exists)



a) $\lim_{x \rightarrow \infty} f(x)$

b) $\lim_{x \rightarrow -\infty} f(x)$

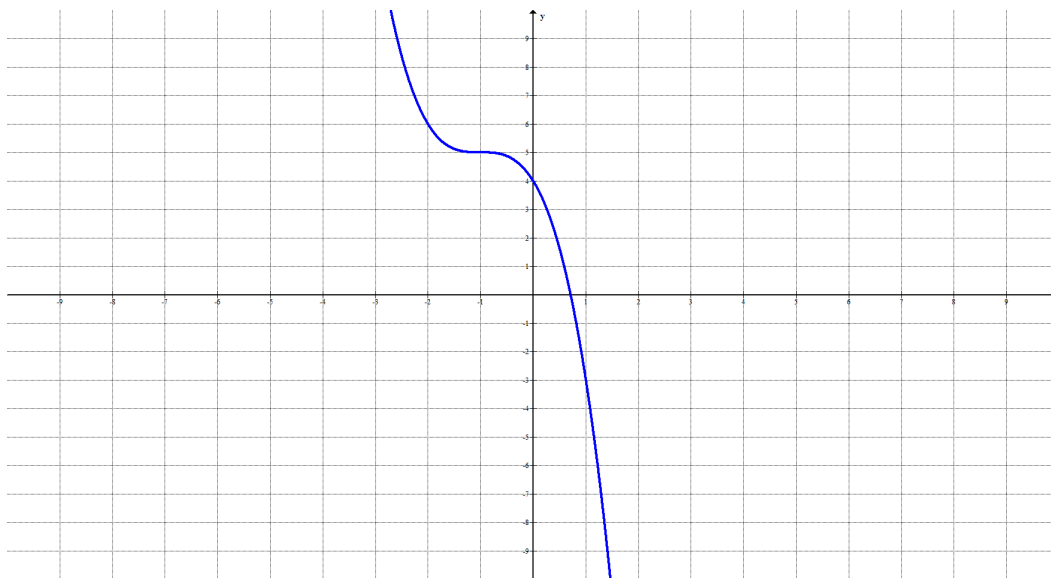
11) Below is a graph of the function $f(x)$. Find the value of each limit (if it exists)



a) $\lim_{x \rightarrow \infty} f(x)$

b) $\lim_{x \rightarrow -\infty} f(x)$

12) Below is a graph of the function $f(x)$. Find the value of each limit (if it exists)

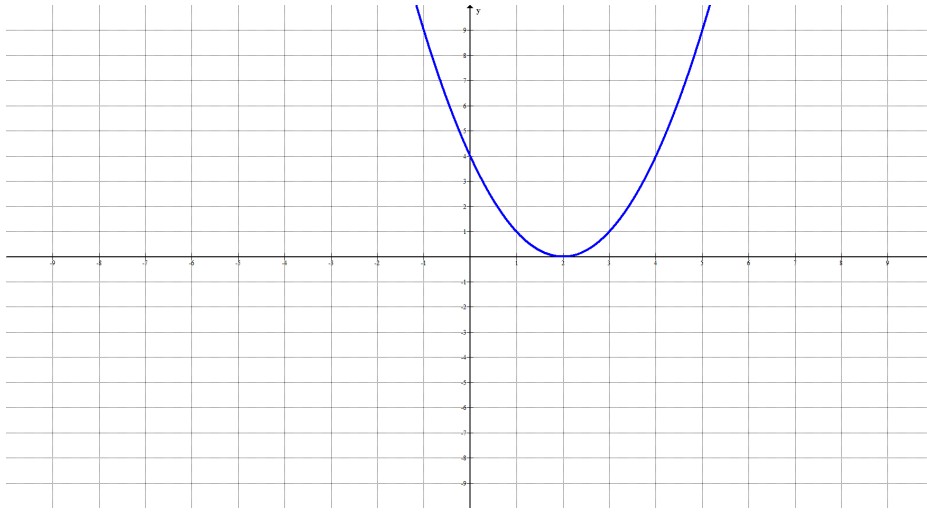


a) $\lim_{x \rightarrow \infty} f(x)$

b) $\lim_{x \rightarrow -\infty} f(x)$

Section 1.1 Limits

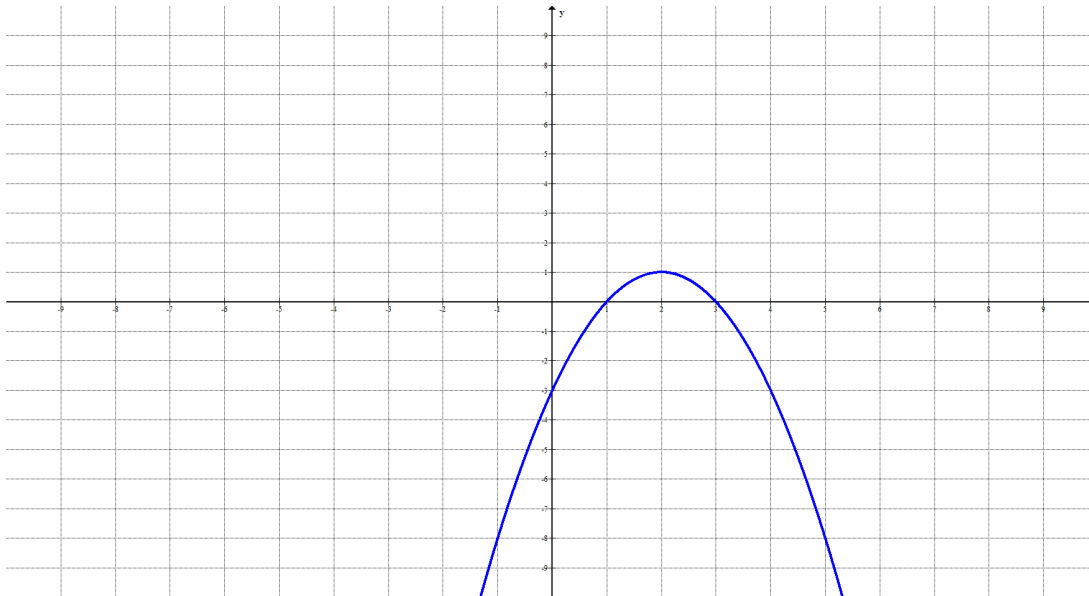
13) Below is a graph of the function $f(x)$. Find the value of each limit (if it exists)



a) $\lim_{x \rightarrow \infty} f(x)$

b) $\lim_{x \rightarrow -\infty} f(x)$

14) Below is a graph of the function $f(x)$. Find the value of each limit (if it exists)



a) $\lim_{x \rightarrow \infty} f(x)$

b) $\lim_{x \rightarrow -\infty} f(x)$

Section 1.1 Limits

#15-26: Complete the table(s) and find the requested limits. (try to carry as decimals as you can in your answer)

15) $f(x) = 3x + 5$, find

a) $\lim_{x \rightarrow 2^-} (3x + 5)$

x	1.5	1.9	1.99	1.999
f(x)				

b) $\lim_{x \rightarrow 2^+} (3x + 5)$

x	2.5	2.1	2.01	2.001
f(x)				

c) Use the results from part a and b to find: $\lim_{x \rightarrow 2} (3x + 5)$

16) $f(x) = 2x - 3$

a) $\lim_{x \rightarrow 4^-} (2x - 3)$

x	3.5	3.9	3.99	3.999
f(x)				

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

x	4.5	4.1	4.01	4.001
f(x)				

c) Use the results from part a and b to find: $\lim_{x \rightarrow 4} f(x)$

17) $f(x) = \frac{x+2}{x-1}$ find

a) $\lim_{x \rightarrow 2^-} \frac{x+2}{x-1}$

x	1.5	1.9	1.99	1.999
f(x)				

b) $\lim_{x \rightarrow 2^+} \frac{x+2}{x-1}$

x	2.5	2.1	2.01	2.001
f(x)				

c) Use the results from part a and b to find: $\lim_{x \rightarrow 2} \frac{x+2}{x-1}$

18) $f(x) = \frac{x+5}{x+2}$

a) $\lim_{x \rightarrow 1^-} \frac{x+5}{x+2}$

x	.5	.9	.99	.999
f(x)				

b) $\lim_{x \rightarrow 1^+} \frac{x+5}{x+2}$

x	1.5	1.1	1.01	1.001
f(x)				

c) Use the results from part a and b to find: $\lim_{x \rightarrow 1} \frac{x+5}{x+2}$

19) $f(x) = \frac{\sqrt{x}-3}{x-9}$, find

a) $\lim_{x \rightarrow 9^-} \frac{\sqrt{x}-3}{x-9}$

x	8.5	8.9	8.99	8.999
f(x)				

b) $\lim_{x \rightarrow 9^+} \frac{\sqrt{x}-3}{x-9}$

x	9.5	9.1	9.01	9.001
f(x)				

c) Use the results from part a and b to find: $\lim_{x \rightarrow 9} \frac{\sqrt{x}-3}{x-9}$

20) $f(x) = \frac{\sqrt{x}-2}{x-4}$

a) $\lim_{x \rightarrow 4^-} \frac{\sqrt{x}-2}{x-4}$

x	3.5	3.9	3.99	3.999
f(x)				

x	4.5	4.1	4.01	4.001
f(x)				

c) Use the results from part a and b to find: $\lim_{x \rightarrow 4} \frac{\sqrt{x}-2}{x-4}$

$$21) f(x) = \frac{2x^2+3x+5}{x^2+4x-5}$$

Complete the table to estimate $\lim_{x \rightarrow \infty} \frac{2x^2+3x+5}{x^2+4x-5}$

x	100	1000	100,000	1,000,000
f(x)				

$$22) f(x) = \frac{6x^2+2x+5}{3x^2+4x-4}$$

Complete the table to estimate $\lim_{x \rightarrow \infty} \frac{6x^2+2x+5}{3x^2+4x-4}$,

x	100	1000	100,000	1,000,000
f(x)				

$$23) f(x) = \frac{6x^3-x^2+2x+5}{3x^4+4x^2-5x}$$

Complete the table to estimate $\lim_{x \rightarrow \infty} \frac{6x^3-x^2+2x+5}{3x^4+4x^2-5x}$

x	100	1000	100,000
f(x)			

$$24) f(x) = \frac{2x^2+2x-5}{3x^4-5x+2}$$

Complete the table to estimate Complete the table to estimate $\lim_{x \rightarrow \infty} \frac{2x^2+2x-5}{3x^4-5x+2}$

x	100	1000	100,000
f(x)			

$$25) f(x) = \frac{6x^5 - x^2 + 2x + 5}{3x^4 + 4x^2 - 5x}$$

Complete the table to estimate $\lim_{x \rightarrow \infty} \frac{6x^5 - x^2 + 2x + 5}{3x^4 + 4x^2 - 5x}$

x	100	1000	10000
f(x)			

$$26) f(x) = \frac{2x^7 + 2x^3 - 5}{3x^4 - 5x}$$

Complete the table to estimate $\lim_{x \rightarrow \infty} \frac{2x^7 + 2x^3 - 5}{3x^4 - 5x}$

x	100	1000	10000
f(x)			