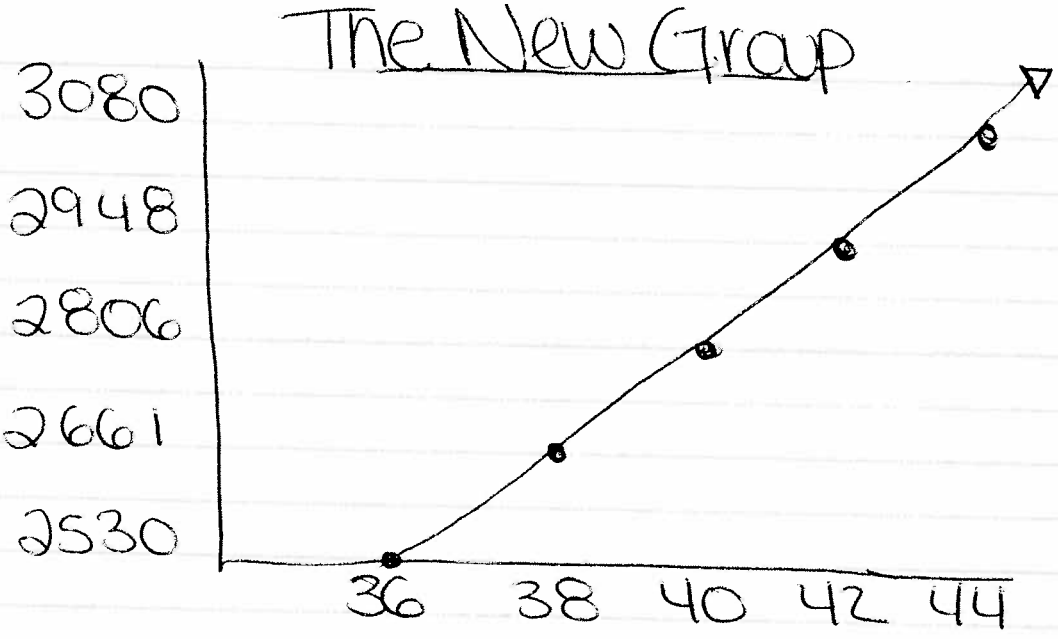
2.1

(2)



a. (36, 2530) and (42, 2948)

$$\frac{2948-2530}{42-36} = \frac{418}{6} = 69.666$$

b. (38, 2661) and (42, 2948)

$$\frac{2948-2661}{42-38} = \frac{287}{4} = 71.75$$

c. (40, 2806) and (42, 2948)

$$\frac{2948-2806}{42-40} = \frac{142}{2} = 71$$

d. (42, 2948) and (44, 3080)

$$\frac{3080-2948}{44-42} = \frac{132}{2} = 66$$

YVES Mascle
ABE EAPEN

2.1 THE GROUP

② a) (36, 2530)(42, 2948) b) (38, 2661)(42, 2948)

$\frac{2948-2530}{42-36} = \frac{418}{6} = \frac{209}{3}$ $\frac{2948-2661}{42-38} = \frac{287}{4}$

c) (40, 2806)(42, 2948) d) (42, 2948)(44, 3080)

$\frac{2948-2806}{42-40} = \frac{142}{2} = \frac{71}{1}$ $\frac{3080-2948}{44-42} = \frac{132}{2} = \frac{66}{1}$

t (min)	36	38	40	42	44
heartbeat	2530	2661	2806	2948	3080

USE DATA to estimate the patient's heart rate after 42 min. using the secant line between the points with the given values of t.

22 #6

SAVE THE POLAR BEARS

Melva Avila, Kristian, Jalisha

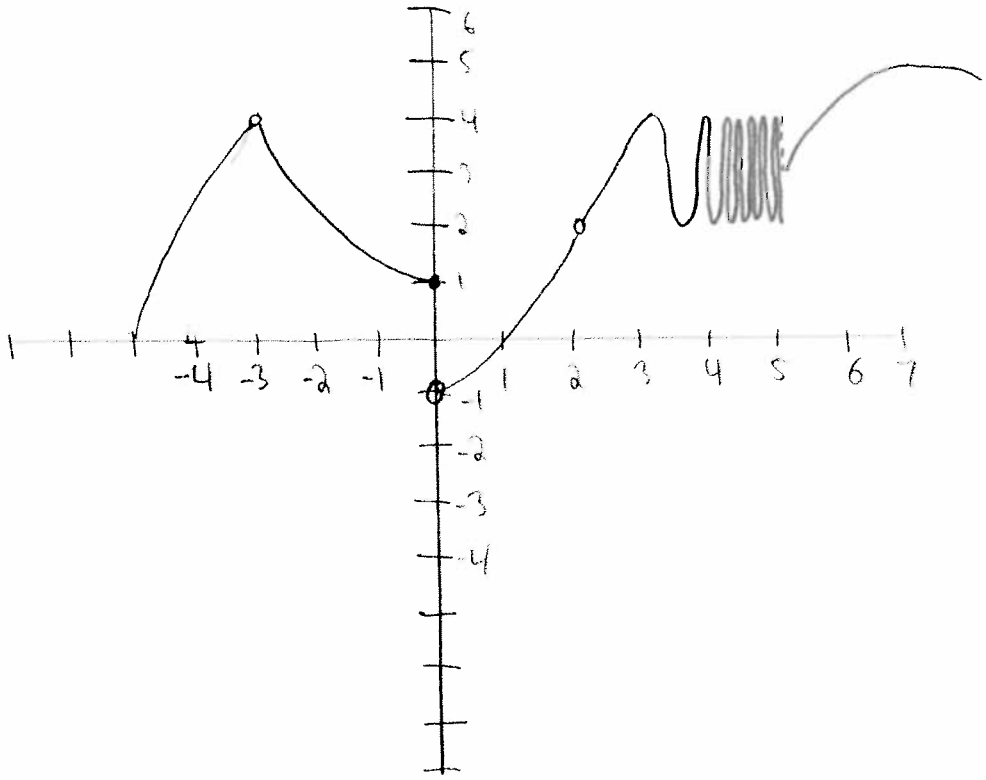
Feb. 1

Homework #6

6. (a) $x \to -3^- = 4$
(b) $x \to -3^+ = 4$
(c) $x \to -3 = 4$
(d) $h(-3)$ = undefined doesn't include -3
(e) $x \to 0^- = 1$
(f) $x \to 0^+ = -1$
(g) $x \to 0$ = undefined
(h) $h(0) = 1$

2 possible answers

(i) $x \to 2 = 2$
(j) $h(2)$ = undefined doesn't inculed 2
(k) $x \to 5^+ = 3$
(l) $x \to 5^-$ = undefined line from neg stops at 0



2.2 #6

Diesel

Connor Payne Tyler Ferst Stanley Tuchez

6) a) $\lim_{x \to -3^-} h(x) = 4$

b) $\lim_{x \to -3^+} h(x) = 4$

c) $\lim_{x \to -3} h(x) = 4$

d) $h(-3) = \text{UND}$

e) $\lim_{x \to 0^-} h(x) = 1$

f) $\lim h(x) = -1$

g) $\lim_{x \to 0} h(x) =$ Doesn't exist b/c graphs of e & f are not equal

h) $h(0) = 1$

i) $\lim_{x \to 2} h(x) = 2$

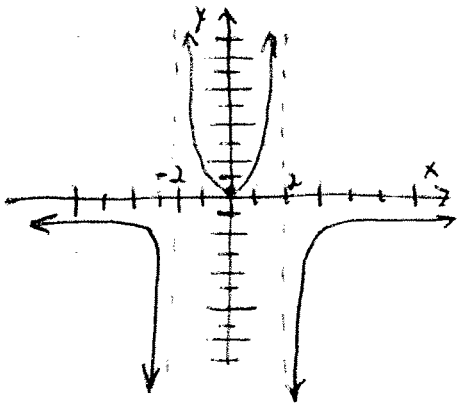
j) $h(2) = \text{UND}$

k) $\lim_{x \to 5^+} h(x) = 3$

l) $\lim_{x \to 5^-} h(x) = \text{UND}$

Our Problem

Function

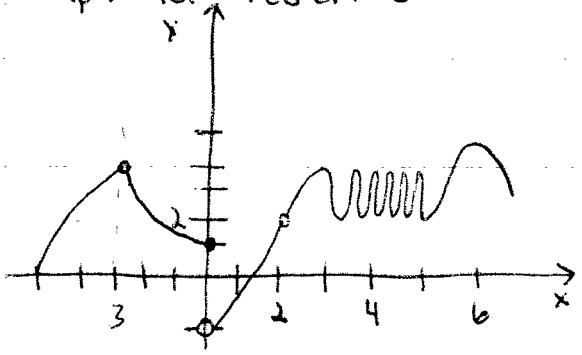


a) $\lim_{x \to 2^+} f(x) = -\infty$ $\lim_{x \to 0} f(x) = 0$

b) $\lim_{x \to -2^+} f(x) = \infty$ $\lim_{x \to 0} f(x) = 0$

c) $\lim_{x \to -2} f(x) = -\infty$ $\lim_{x \to 2} f(x) = \text{UND}$

Graph for Problem #6



2.2 #9

C. A. M.
01. Feb. 10.

Page # 97.
9a (own Problem)

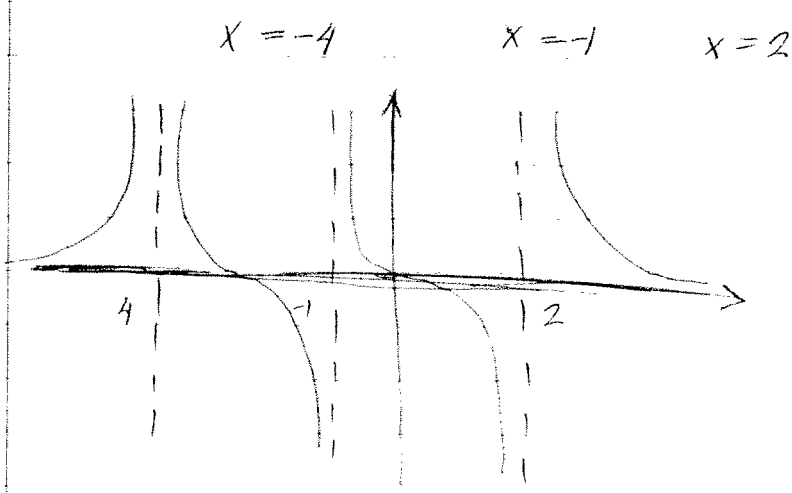
(a) $\lim_{x \to -4} f(x) = \infty$

(b) $\lim_{x \to -1} f(x) = \infty$

(c) $\lim_{x \to 2^+} f(x) = +\infty$

(d) $\lim_{x \to 2^-} f(x) = -\infty$

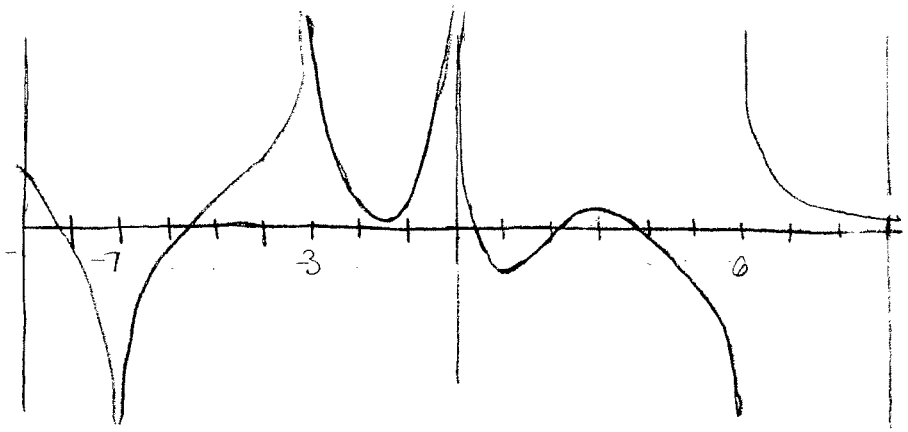
(e) equations of vertical asymptotes.



22 #9

Grandle Pumpkins

9)



A) $\lim_{x \to -7^-} f(x) = -\infty$ $x = -7$

B) $\lim_{x \to -3^-} f(x) = \infty$ $= -3$

C) $\lim_{x \to 0} f(x) = \infty$ $x = 0$

D) $\lim_{x \to 5^-} f(x) = -\infty$ $x = 5$

E) $\lim_{x \to 6^+} f(x) = \infty$ $x = 6$

Through visual means we could tell when the function would not pass a specific x value without increasing at an insanely fast rate

2.2 #12

CIVARC

JASON KOHLHEPP
RYAN D'SOUZA
STEPHEN MANCE

"GROUP PROBLEM"

SECTION 2.2 PROB. #12

12.) SKETCH THE GRAPH OF THE FUNCTION & USE IT TO DETERMINE THE VALUES OF "a" FOR WHICH $\lim_{x \to a} f(x)$ EXISTS.

$$f(x) = \begin{cases} 2-x & \text{if } x < -1 \\ x & \text{if } -1 \leq x < 1 \\ (x-1)^2 & \text{if } x \geq 1 \end{cases}$$

$\lim_{x \to -1^-} f(x)$: $2-x$ if $x < -1$

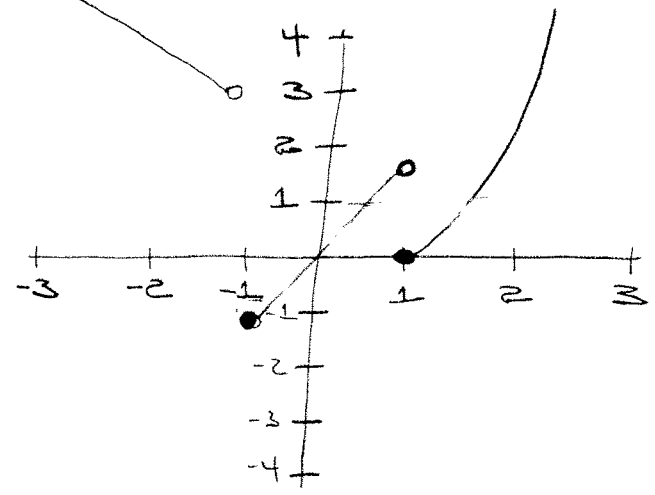
$= 2-(-1) = \boxed{3}$

$\lim_{x \to -1} f(x)$: x if $-1 \leq x < 1$

$= \boxed{-1}$

$\lim_{x \to 1^+} f(x)$: $(x-1)^2$ if $x \geq 1$

$(1-1)^2 = \boxed{0}$



2.2 #12

Team: FR3CH

Vinh

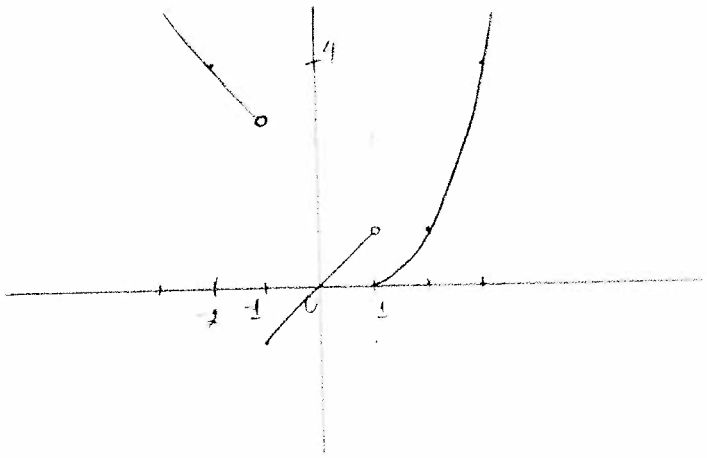
Ioan

Mike

2.2 - 12 / p98

$$f(x) = \begin{cases} 2 - x & \text{if } x < -1 \\ x & \text{if } -1 \le x < 1 \\ (x-1)^2 & \text{if } x \ge 1 \end{cases}$$

Graph:



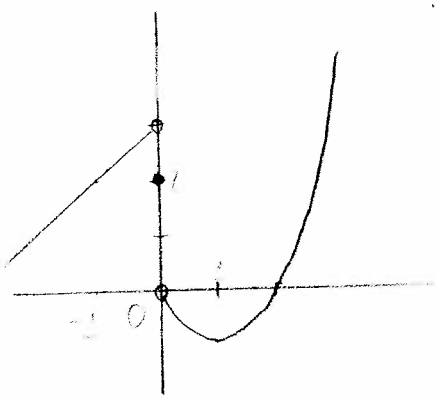
Based on the graph $\lim_{x \to -1} f(x)$ and $\lim_{x \to 1} f(x)$ do not exist.

Thus the value of a for which $\lim_{x \to a} f(x)$ exist is:

$$-1 < a$$
$$\text{or} \quad -1 < a < 1$$
$$\text{or} \quad a > 1$$

* Similar problem.

$$f(x) = \begin{cases} x + 3 & \text{if } x < 0 \\ x^2 - 2x & \text{if } x > 0 \\ 2 & \text{if } x = 0 \end{cases}$$



The value of a for which $\lim_{x \to a} f(x)$ exist is: $\begin{cases} a > 0 \\ a < 0 \end{cases}$

2.2 #17

MAT151 ... Team: OL

2/1/10

17 alternative

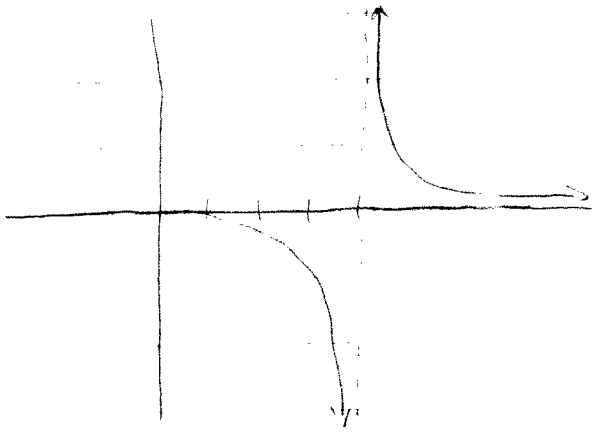
, Jonathan Chen
Mike Gurkhujag
Guan Zheng

* Guess the limit by evaluating the function at given #'s.

$$\lim_{x \to 4^-} \frac{(x^2 - x)}{(x-4)} = -\infty$$

; $x = 0, 1.702, 2.12, 2.9, 3.5$

(using trace on calculator)



(2.2 #17)

C.W.V

Letrice Thomas
Wilgens Pierre
Vivien Nyatuka

2/1/10

2.2 #(17)

(17) Guess the value of the limit (if it exists) evaluate func. wl given #'s correct to 6 decimals.

$\lim_{x \to 2} \frac{x^2 - 2x}{x^2 - x - 2}$ $x = 2.5, 2.1, 2.01, 2.001, 2.005$
$1.9, 1.95, 1.995, 1.999, 1.99$

It appears that this function needs to be evaluated at values close to 2, but $\neq 2$ there are values above 2 and below 2

$\frac{2.5^2 - 2(2.5)}{2.5^2 - 2.5 - 2} = \frac{1.25}{1.75} = .714285$

$\frac{2.1^2 - 2(2.1)}{2.1^2 - 2.1 - 2} = \frac{.21}{.31} = .677419$

$\frac{2.01^2 - 2(2.01)}{2.01^2 - 2.01 - 2} = \frac{.0201}{.0301} = .667774$

$\frac{2.001^2 - 2(2.001)}{2.001^2 - 2.001 - 2} = \frac{.002001}{.003001} = .664784$

$\frac{2.005^2 - 2(2.005)}{2.005^2 - 2.005 - 2} = \frac{.010025}{.015025} = .667221$

$\frac{1.9^2 - 2(1.9)}{1.9^2 - 1.9 - 2} = \frac{-.19}{-.29} = .655172$

$\frac{1.95^2 - 2(1.95)}{1.95^2 - 1.95 - 2} = \frac{-.0975}{-.1475} = .661016$

$\frac{1.995^2 - 2(1.995)}{1.995^2 - 1.995 - 2} = \frac{-.009975}{-.014975} = .666011$

$\frac{1.999^2 - 2(1.999)}{1.999^2 - 1.999 - 2} = \frac{-.001999}{-.002999} = .666555$

$\frac{1.99^2 - 2(1.99)}{1.99^2 - 1.99 - 2} = \frac{-.0199}{-.0299} = .665551$

$1.05^2 - 2(2.05) = .1025$

$2.05^2 - 2.05 - 2 = .1525$

$\frac{.1025}{.1525} = .672131$

Table

x	f(x)
2.5	.714285
2.1	.677419
2.05	.672131
2.01	.667774
2.001	.664784
2.005	.667221

x	f(x)
1.9	.665172
1.95	.661016
1.99	.665518
1.995	.666611
1.999	.666555

So the limit $\lim_{x \to 2} \frac{x^2 - 2x}{x^2 - x - 2} = 0.666\overline{6}$

L.W.V
Letrice Wilgens

alternative Problem

2/1/10

12 #170 given

$$\lim_{x \to 3} f(x) = \frac{x^2 - 3x}{x^2 - 2x - 3}$$

x
3.5
3.1
3.05
3.01
3.005
3.001

x
2.9
2.95
2.99
2.995
2.999

$\frac{(3.5)^2 - 3(3.5)}{(3.5)^2 - 2(3.5) - 3} = \frac{1.75}{\quad} = .777778$

$\frac{(3.1)^2 - 3(3.1)}{(3.1)^2 - 2(3.1) - 3} = \frac{.31}{.41} = .756098$

$\frac{(3.05)^2 - 3(3.05)}{(3.05)^2 - 2(3.05) - 3} = \frac{.1525}{.2025} = .753086$

$\frac{(3.01)^2 - 3(3.01)}{(3.01)^2 - 2(3.01) - 3} = \frac{.0301}{.0401} = .750623$

$\frac{(3.005)^2 - 3(3.005)}{(3.005)^2 - 2(3.005) - 3} = \frac{.015025}{.020025} = .750312$

$\frac{(3.001)^2 - 3(3.001)}{(3.001)^2 - 2(3.001) - 3} = \frac{.003001}{.004001} = .750062$

$\frac{(2.9)^2 - 3(2.9)}{(2.9)^2 - 2(2.9) - 3} = \frac{-.29}{-.39} = .7435897$

$\frac{(2.95)^2 - 3(2.95)}{(2.95)^2 - 2(2.95) - 3} = \frac{-.1475}{-.1975} = .746835$

$\frac{(2.99)^2 - 3(2.99)}{(2.99)^2 - 2(2.99) - 3} = \frac{-.0299}{-.0399} = .749373$

$\frac{(2.995)^2 - 3(2.995)}{(2.995)^2 - 2(2.995) - 3} = \frac{-.014975}{-.019975} = .74968$

$\frac{(2.999)^2 - 3(2.999)}{(2.999)^2 - 2(2.999) - 3} = \frac{-.002999}{-.003999} = .749937$

22 #21

B.A. is B.S.

Steven Nonemaker
Will Arbito

2/1/10

$$\lim_{x \to 0} \frac{\sqrt{x+4} - 2}{x} = .25$$

$x = .1 \quad = \quad .24984$

$x = .01 \quad .24946$

$x = .0001 \quad .25$

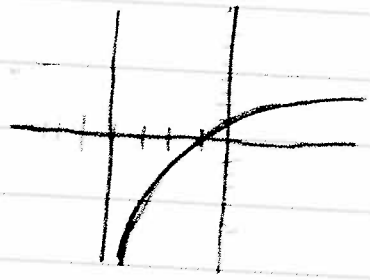
2.2 #21

Team Empire Laquan Drummer, Fabian Best

21A use table of values to estimate limit Sal Tutorial

$$\lim_{x \to -4^+} \frac{4x}{x+4} = -\infty$$

x	y
-1	-1.33...
-2	-4
-3	-12
-3.5	-28



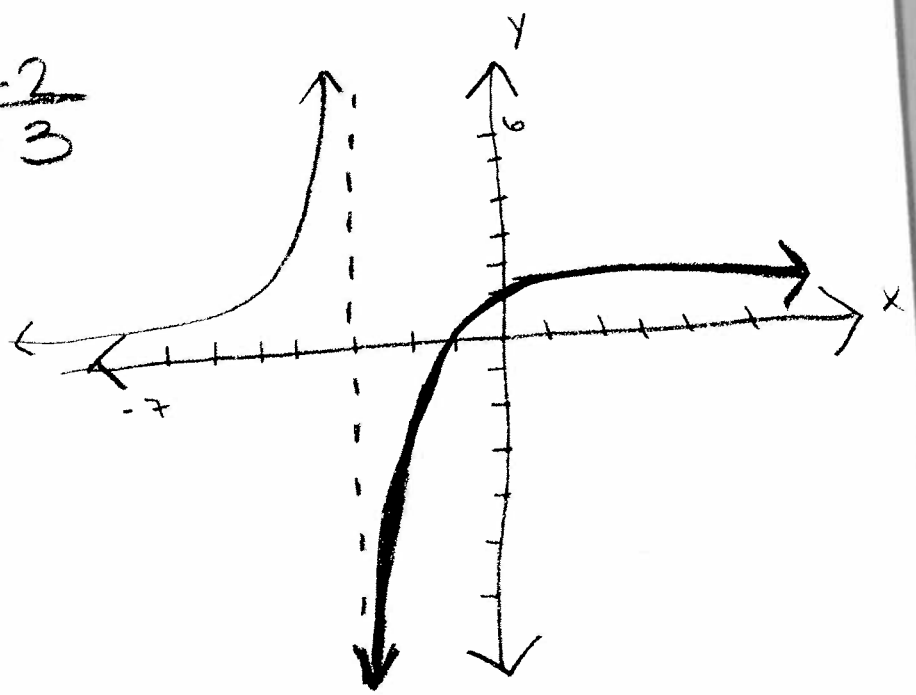
We Love math

Jessica
Krystina
Stefania

2.2 p. 98

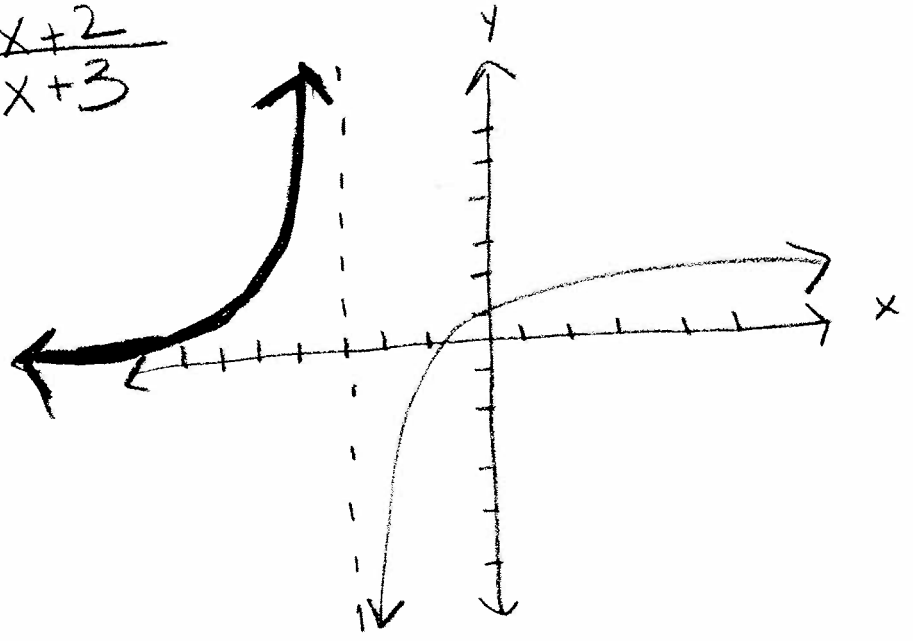
25. $\lim_{x \to -3^+} \frac{x+2}{x+3}$

$= -\infty$



26. $\lim_{x \to -3^-} \frac{x+2}{x+3}$

$= \infty$

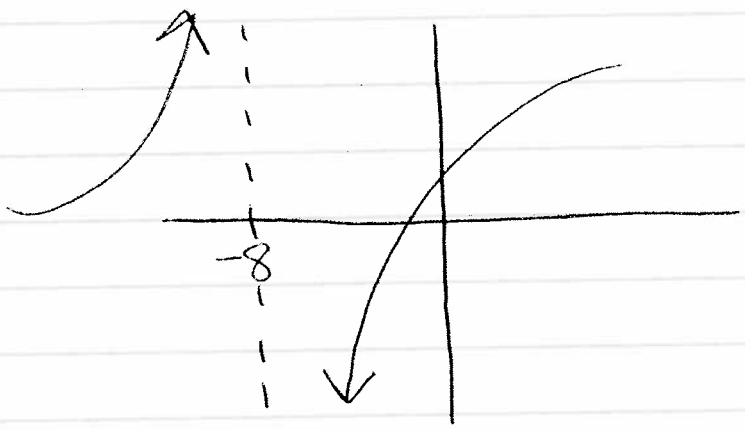


2.2 #25

Team Kickass

25a. $\lim_{x \to -8^+} \frac{x+2}{x+8} = -\infty$

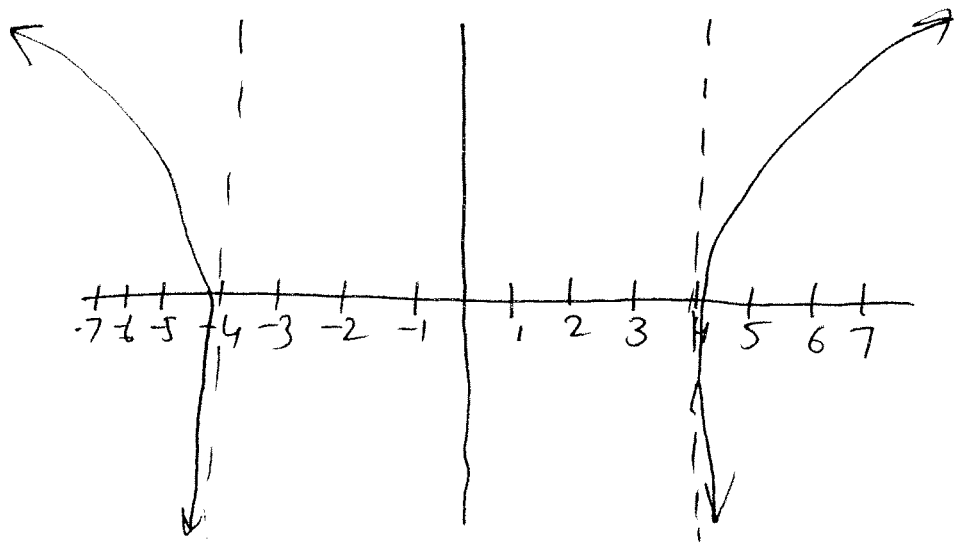
26a. $\lim_{x \to -8^-} \frac{x+2}{x+8} = \infty$



2.2 #29

Science Buddy

$$\lim_{x \to -4^-} \ln(x^2 - 16) = -\infty$$



$$\lim_{x \to -4^+} \ln(x^2 - 16) = \text{UND}$$