

Section 3.1 Questions

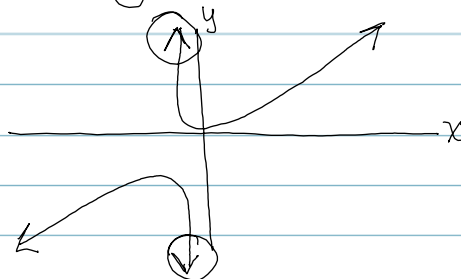
(33, 40, 5, 3.)

#3 $\lim_{x \rightarrow 2} \frac{x^2 - 4}{x - 2}$ Step 1 Factor $x^2 - 4 = (x+2)(x-2)$

Step 2 $\lim_{x \rightarrow 2} \frac{(x+2)\cancel{(x-2)}}{\cancel{(x-2)}} = 2+2 = 4$

#5 $\lim_{x \rightarrow -1} \frac{x^2 + 1}{x + 1}$ Step 1 Graph because unable to factor, $x^2 + 1$.

Step 2 Graph in Calculator
 $y = ;$ enter equation;



DNE b/c both heading in opposite directions.

#33 $A(t) = \frac{7.0}{1 + 5.4(1.2)^{-t}}$ $\lim_{t \rightarrow +\infty} A(t)$

Step 1 $\lim_{t \rightarrow +\infty} \frac{7}{1 + 5.4(1.2)^{-\infty}} = \frac{7}{1 + \infty} = \frac{7}{\infty}$

Step 2 $\frac{5.4}{1.2^\infty} = \frac{5.4}{\infty} = \emptyset$ } bottom denominator

2 data points

#40 $(0, 35)$

$(11, \cancel{35})$
20

Step 1 $m = \frac{35 - 20}{0 - 11} = \frac{15}{-11}$

Step 2

$(11, \underline{20})$

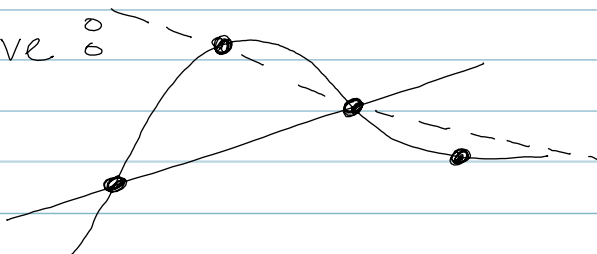
Thus, DNE b/c we do not have both positive and negative sides of the limits

Section 3.4 Average rate of Δ (change)

Define: average rate of change = slope

Formula $\frac{y_2 - y_1}{x_2 - x_1} = \frac{\Delta y}{\Delta x} = \frac{f(x_2) - f(x_1)}{x_2 - x_1}$

Example of curve:



HW Questions - Review

#6

x Kilos	1	2	3
C(x) Pounds	2.2	3.3	4.0

Interval: $[1, 3]$

ending x
starting x

$C(3) = 4.0$
 $C(1) = 2.2$

average rate of change

$$\frac{C(3) - C(1)}{3 - 1} = \frac{4.0 - 2.2}{3 - 1} = \frac{1.8}{2} = 0.9$$

$m = 0.9$