

NAME - ESTUDHEATSE TOSAM DORCAS
 COLLEGE - ENGG. DEEERING
 DEPARTMENT - MECHANICAL
 MAT NO - 171EHEG061029
 COURSE - ENGG 281
 LEVEL - 200.

Questions:

1. Given a function to be as $f(x) = \pi$
 Find $\lim_{x \rightarrow 3} f(x)$

Solution

$$\lim_{x \rightarrow 3} \pi$$

The limit does not exist

2. $f(x) = 5x - 21 = 9$
 $x \rightarrow 6$

$\delta = 0.1$ $a = 6$ Step: 0.0.1

a	a - δ	f(x)	a	a + δ	f(x)
6	5.90	8.50	6	6.10	9.50
	5.91	8.55		6.09	9.45
	5.92	8.60		6.08	9.40
	5.93	8.65		6.07	9.35
	5.94	8.70		6.06	9.30
	5.95	8.75		6.05	9.25
	5.96	8.80		6.04	9.20
	5.97	8.85		6.03	9.15
	5.98	8.90		6.02	9.10
	5.99	8.95		6.01	9.05
	6.00	9.00		6.00	9.00

$$\therefore \lim_{x \rightarrow 6} 5x - 21 = 9$$

$$\lim_{x \rightarrow 3^+} \frac{3-x}{|3-x|}$$

It is from the right hand.
 Let x be $(3 + \delta)$

$$\frac{3 - (3 + \delta)}{|3 - (3 + \delta)|}$$

$$= \frac{3 - 3 - \delta}{|3 - 3 - \delta|}$$

$$= \frac{-\delta}{|-\delta|}$$

$$= \frac{-\delta}{\delta} = -1$$

* $\lim_{x \rightarrow 3} \frac{x-3}{|x-3|}$

From right hand

$$\lim_{x \rightarrow 3^+} \frac{x-3}{|x-3|}$$

Let x be $(3 + \delta)$

$$\frac{3 + \delta - 3}{|3 + \delta - 3|}$$

$$= \frac{\delta}{\delta} = 1$$

From left hand

$$\lim_{x \rightarrow 3^-} \frac{x-3}{|x-3|}$$

Let x be $(3 - \delta)$

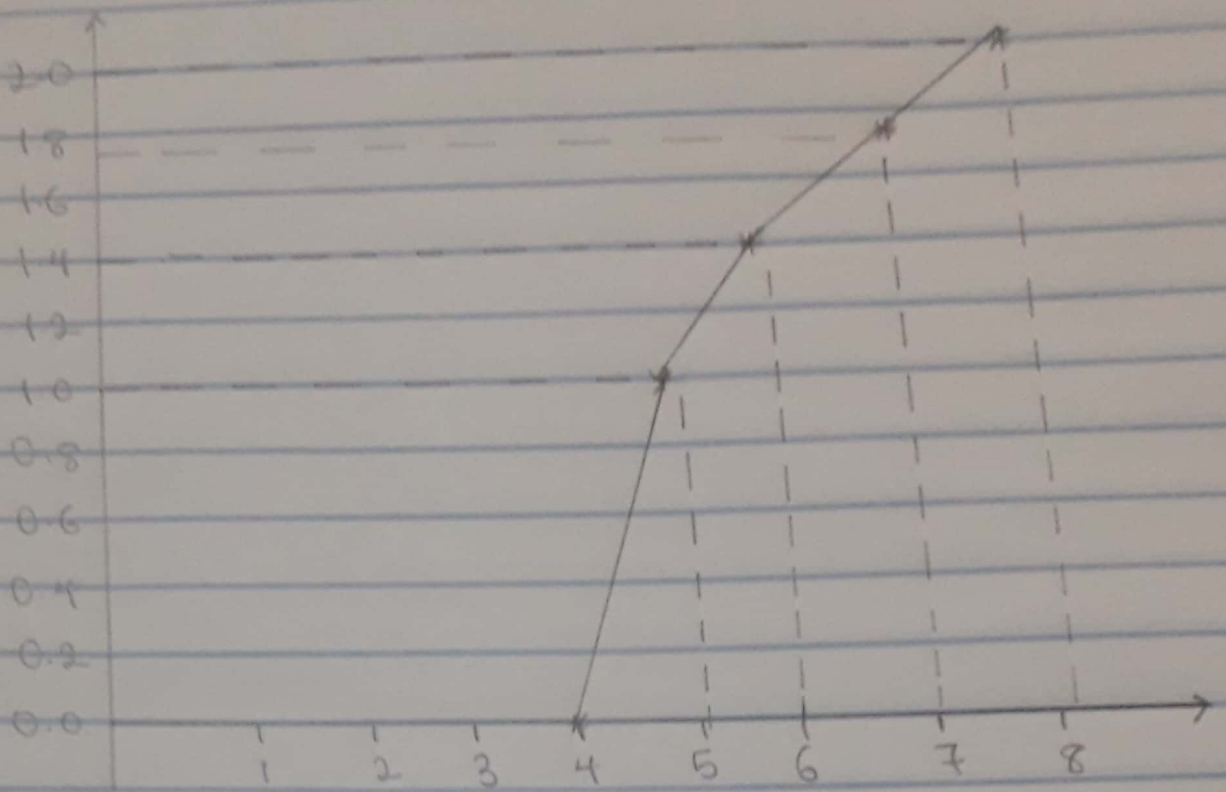
$$\frac{3 - \delta - 3}{|3 - \delta - 3|} = \frac{-\delta}{|-\delta|}$$

$$= \frac{-\delta}{\delta} = -1$$

The limit $\frac{x-3}{|x-3|}$ does not exist.

5 $f(x) = \sqrt{x-4}$ (4, 8)

x	$y = f(x)$
4	0.0
5	1.0
6	1.4
7	1.7
8	2



This is a continuous graph.