

Exerkun Darsah Kelas

17/EN404/525

Electrical / Electronics Engineering

EN4 281

1. $f(x) = x$, $\lim_{x \rightarrow 2^+} f(x)$

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

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

2. The Model of a system has been developed by an engineer in the form

$$f(x) = 5x - 21$$

Given that 0.1 and using a step 0.01, demonstrating a table form that the limit of the model as $x \rightarrow 1$ is equal

$f(x)$	$x = 0$	$x = 0$	$f(x)$
5.50	5.90	6.10	9.50
5.55	5.91	6.09	9.45
5.60	5.92	6.08	9.40
			9.35

lim f(x) = 11
x → 2

lim f(x) = 11
x → 2⁺

2. The Model of a system has been developed by an engineer to be given as

$$f(x) = 5x - 21$$

Given that 0.1 and 0.01 are step 0.01 demonstrating a table from that the limit of the model as $x \rightarrow 1$ is equal

f(x)	a - 0	a + 0	f(x)
7.50	5.90	6.10	9.50
7.55	5.91	6.09	9.45
7.60	5.92	6.08	9.40
7.65	5.93	6.07	9.35
7.70	5.94	6.06	9.30
7.75	5.95	6.05	9.25
7.80	5.96	6.04	9.20
7.85	5.97	6.03	9.15
7.90	5.98	6.02	9.10
7.95	5.99	6.01	9.05
8.00	6.00	6.00	9.00

∴ the right hand limit & left hand limit are equal + 9

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

$$\lim_{x \rightarrow 3} \frac{3 - (3+x)}{(3 - (3+x))} = \frac{3 - x}{x} = -1$$

4 Evaluate the limit of the Model given as

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

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

$$\lim_{x \rightarrow 3} = \frac{3-3}{|3-3|} = \frac{0}{0} ; \text{ the limit does not exist}$$

5

x
4
5
6
7
8

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

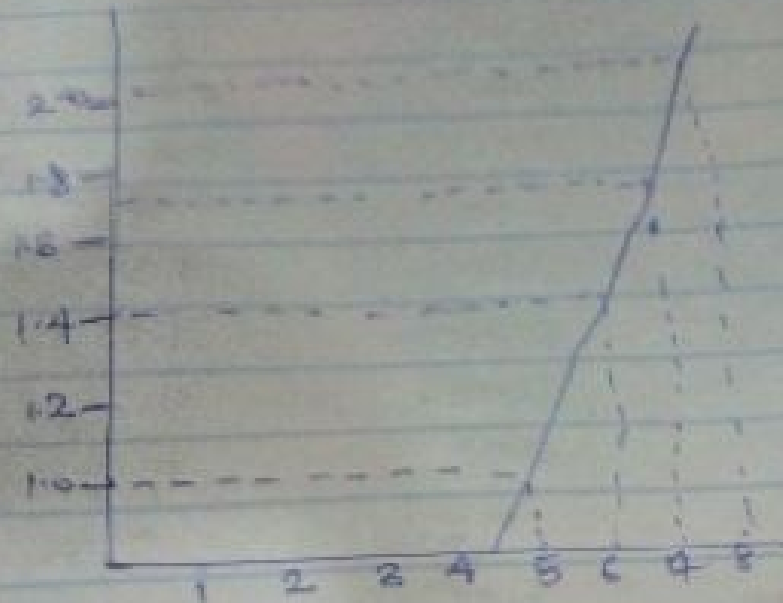
0

1.0

1.4

1.7

2.0



The graph shows that $f(x) = \sqrt{x}$ is continuous on the interval $(4, 8)$ because there was no point where the function was undefined and the graph is a straight line graph.