

ENG 281

Adomah Yusuf computer engineering 17/ENG02/003

- ① Given a function to be a in equation (1)
 $f(x)$, π find $\lim_{x \rightarrow 3} f(x)$

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

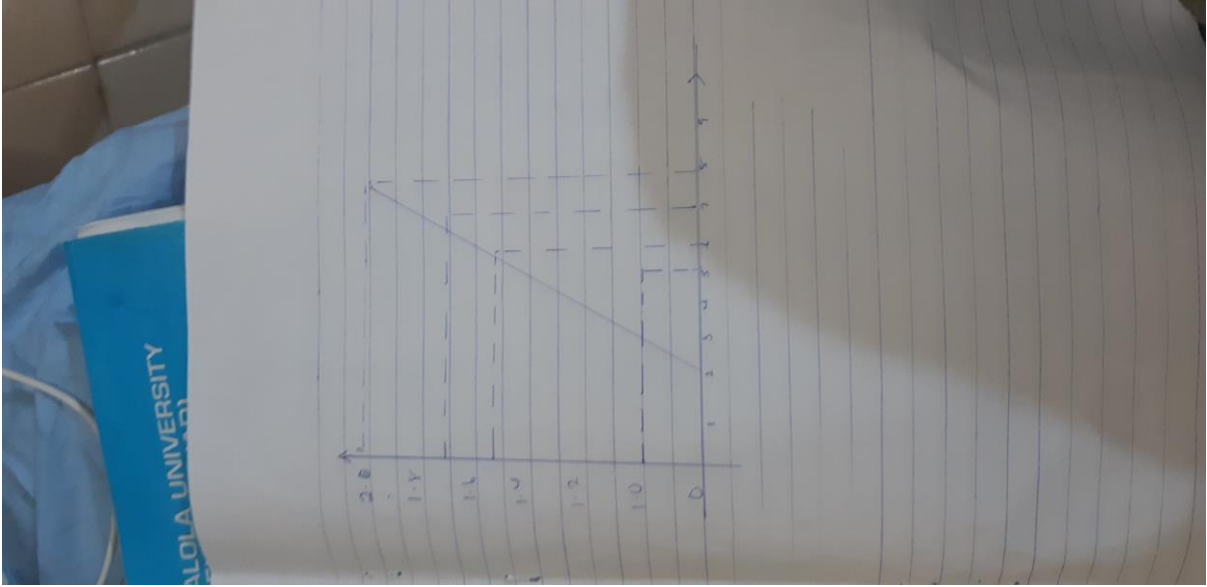
- ② The model of a system has been developed by an engineer to be as given in Equation (2)
 $f(x) = 5x - 21$

$f(x)$	$x - 5$	$x = 6$	$x + 5$	$f(x)$
8.50	5.90	-	6.10	9.50
8.55	5.91		6.09	9.48
8.60	5.92		6.08	9.40
8.65	5.93		6.07	9.35
8.70	5.94		6.06	9.30
8.75	5.95		6.05	9.25
8.80	5.96		6.04	9.20
8.85	5.97		6.03	9.15
8.90	5.98		6.02	9.10
8.95	5.99	↓	6.01	9.05
9.00	6.00		6.00	9.00

Since the limits are defined both on the L.H.S and R.H.S can be said the limit is read and thus exists

- 3) Find the limits of the model question gives below

P.F.U



$\lim_{x \rightarrow 3} \frac{3-x}{|3-x|}$
 $\lim_{x \rightarrow 3} \frac{3-x}{|3-x|} = \frac{3-(3+2)}{|3-(3+2)|} = \frac{-2}{|-2|} = -1$
 $\lim_{x \rightarrow 3} \frac{3-x}{|3-x|} = \frac{3-(3-2)}{|3-(3-2)|} = \frac{2}{|2|} = 1$

4) Evaluate the limit of the model given as $\lim_{x \rightarrow 3} \frac{x-3}{x^2-5(x-3)}$

$\lim_{x \rightarrow 3} \frac{x-3}{x^2-5(x-3)}$
 $\lim_{x \rightarrow 3} \frac{3-3}{3^2-5(3-3)} = \frac{0}{9-5(0)} = \frac{0}{9} = 0$ The limit does not exist

5) x $F(x) = \sqrt{x+4}$

4	0
5	1.0
6	1.4
7	1.7
8	2.0

The graph shows the function $\sqrt{x+4}$ of interval (0,8) is continuous because there was no point where the function was undefined and the graph is a straight line graph.