

Ekeogu Izuchukwu

17/ENG04/019

Elect/Elect Engr

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1)  $f(x) = \pi$   
 $\lim_{x \rightarrow 3} f(x) = \pi$

2)  $f(x) = 5x - 2.1$   
 $\delta = 0.1$

$f(x)$	$a - \delta$	$a = 6$	$a + \delta$	$f(x)$
8.5	5.9		6.1	9.5
8.55	5.91		6.09	9.45
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

The limit exists.

3)  $\lim_{x \rightarrow 3^+} \frac{3-x}{|3-x|}$   
 $a = 3 + \delta$   
 $\Rightarrow \lim_{x \rightarrow 3^+} \frac{(3 - (3 + \delta))}{|3 - (3 + \delta)|} = \frac{3 - 3 - \delta}{|3 - 3 - \delta|} = \frac{-\delta}{\delta} = -1$

4)  $\lim_{x \rightarrow 3} \frac{x-3}{|x-3|}$   
 $\Rightarrow \frac{3-3}{|3-3|} = \frac{0}{0}$

The limit does not exist (Indefinite)

5)  $f(x) = \sqrt{x-4}$   $[4 \leq x \leq 8]$

$x$	$f(x)$
4	0
5	1
6	1.4
7	1.7
8	2