ELBNDU JUSTICE

17/ENG02/021

COMPUTER ENGINEERING ENG 281

1) $\lim_{x \to 3} f(x)$

$f(x) = \pi$

Solution:

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

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

$\cdot \delta \doteq 0.1$

$5(6.1) - 21 = 9.5$

$5(6.01) - 21 = 9.05$

$5(6.001) - 21 = 9.005$

$5(6.0001) - 21 = 9.0005$

$5(6.00001) - 21 = 9.00005$

$\cdot 5(6.000001) - 21 = 9.0000025$

$[f(x) = 5x - 21]$ lead toward 9 as $x \to 6$

3) $\lim_{x \to 3^+} = \frac{3-x}{|3-x|} = \frac{(3-3+h)}{(3-3+h)} = \frac{3-3-h}{3-3-h}$

$\frac{0-h}{0-h} = h/h$ where $h = 0$

the limit is with the right hand limit.

4) $\lim_{x \to 3} \frac{x+3}{|x-3|}$

$a\ x = 0$

$\lim_{x \to 3} \left[\frac{3-h-3}{3+h-3}\right] = 0/0$

at $x \geq 0$

$\lim_{x \to 7} \left(\frac{(3+h)-3}{|3+h|-3}\right]$ where $h \to 0 = \frac{3-3}{3-3} = 0/0$ i.e

the limits do not exists from both left ~~hand~~ and right hand.

5) Show that $f(x) = \sqrt{x-4}$ is continuous on interval

Solution

$A\ Y_3\ f(x) = \sqrt{x-4})$

at $x \to 8 = \sqrt{8-4} = 2$

$f(x)$ is 4 continuous at $(4, 8)$