

NAME: Umar Abdulrahman Mohammed

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1.  $\lim_{x \rightarrow 3} f(x) = 9$

$x \rightarrow 3 \quad = 9$

2. $f(x)$	$x - \theta$	$x + \theta$	$f(x)$
8.50	5.90	6.10	9.30
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

Since the right hand limit (RHL) and left hand limit (LHL) are equal to 9, therefore  $\lim_{x \rightarrow 6} (5x - 21) = 9$ .



3) Show that the function given in the equation below is continuous on the interval  $f(x) = \sqrt{x-4}$

Soln

Find the limit of the model given as:

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

Soln

$$\lim_{x \rightarrow 3^+} \frac{3-x}{|3-x|} = \lim_{x \rightarrow 0} \frac{3-(3+x)}{|3-(3+x)|} = \frac{-x}{x} = \underline{\underline{-1}}$$

4) Evaluate the limit of the model given as

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

$$= \frac{3-3}{3-3} = \frac{0}{0} \text{ (undefined)}$$

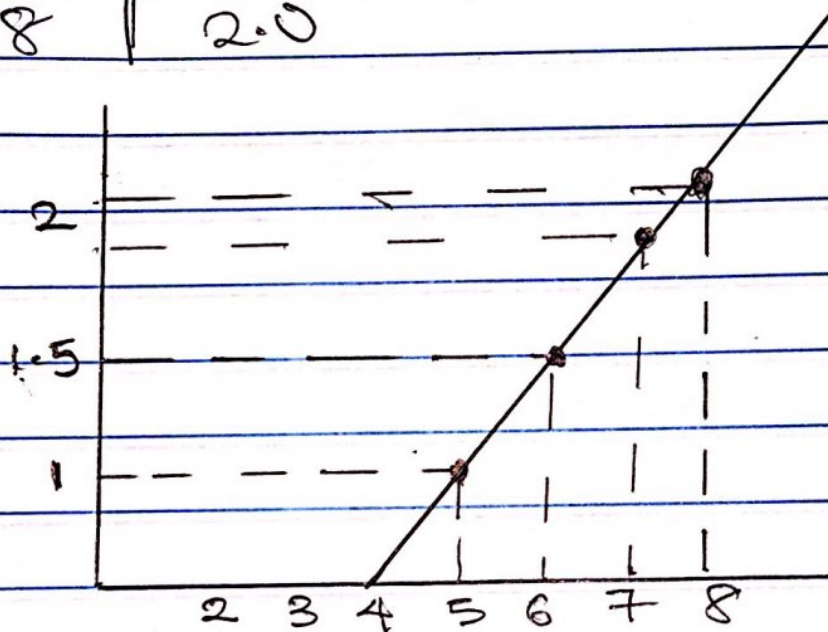
The limit does not exist.

5) Show that the function given in the equation below is continuous on the interval  $f(x) = \sqrt{x-4}$

Soln



$x$	$f(x) = \sqrt{x-4}$
4	0
5	1.0
6	1.4
7	1.7
8	2.0



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