UNIT 1

STATION I – One and Two Sided LIMITS

1.0 Students demonstrate knowledge of both the <mark>formal definition and the graphical interpretation of limit</mark> of values of functions. This knowledge includes <mark>one-sided limits,</mark> infinite limits, and limits at infinity. ~~Students know the definition of convergence and divergence of a function as the domain variable approaches either a number or infinity:~~

LEVEL 1

1. What is the definition of a limit in Calculus?

2. Complete the following sentence.

In order for the limit to exist at a point, both the _____ and the

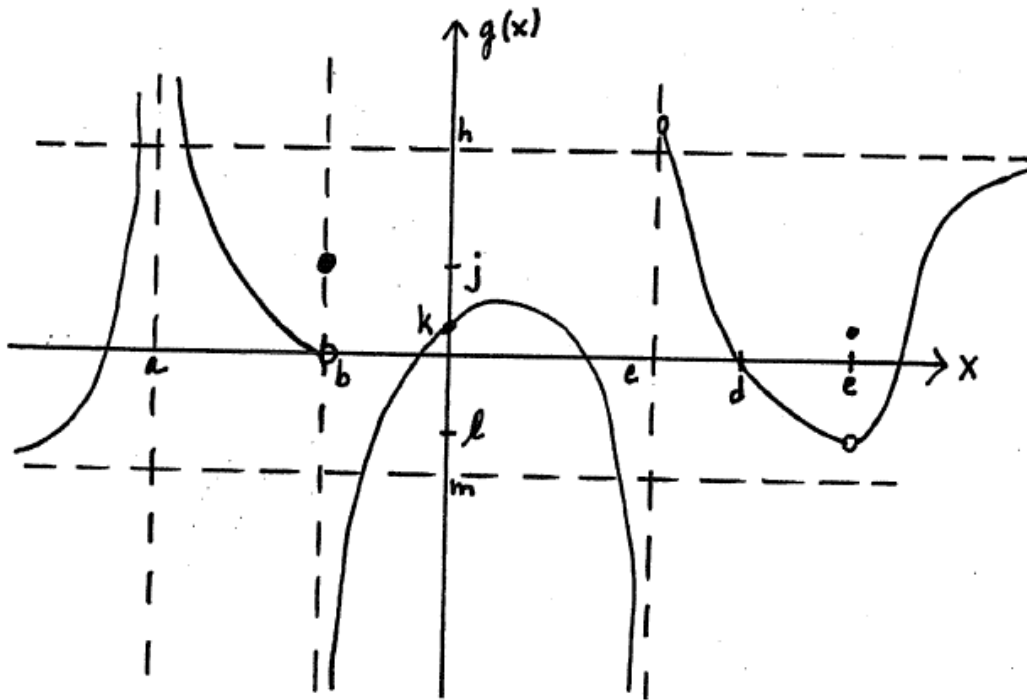_____ must be _____.

LEVEL 2

: Find each limit

a) $\lim\limits_{x \to 1}\left(-x^2 + 1\right)$

b) $\lim\limits_{x \to 3}\dfrac{\sqrt{x+1}}{x-4}$

c) $\lim\limits_{h \to 0}\left(3h^2 + 2h\right)$

d) $\lim\limits_{h \to 0}\left(3x^2 - 2xh + 5h\right)$

LEVEL 3

1.   lim g(x)
         x → a⁻

2.   lim g(x)
         x → b⁺

3.   lim g(x)
         x → b⁻

4.   lim g(x)
         x → c⁺

5.   lim g(x)
         x → d