

THE VILLAGE INTERNATIONAL SCHOOL
RECAP ACTIVITY – LIMITS AND DERIVATIVES

NAME: _____

DATE : _____

Evaluate:

1) $\lim_{x \rightarrow 1} x + 2$

2) $\lim_{x \rightarrow 0} \frac{2x+x}{2-x}$

3) $\lim_{x \rightarrow 0} \frac{x^2 - 36}{x-6}$

Check the continuity of the following function at $x=6$ and $x=4$

$$g(x) = \begin{cases} 2x & x < 6 \\ x - 1 & x \geq 6 \end{cases}$$

Check the continuity of function at $t=-2$ and $t=10$

$$h(t) = \begin{cases} t^2 & t < -2 \\ t + 6 & t \geq -2 \end{cases}$$

Find the derivatives of following by using first principle:

(1) $5x$

(2) $\frac{1}{x}$

Find the derivatives of following :

a) $y = x^2 + 2x + 1$

b) $y = 4x^3 - 3x^2 + 2x - 1$

c) $y = \frac{1}{4}x^4 + \frac{1}{3}x^3 + \frac{1}{2}x^2$

d) $y = -\frac{5x^8}{9} - \frac{8x^7}{13} - \frac{9x^6}{16}$

e) $y = (3x - 5)^3$