

18, 19

مراجعة

$$\frac{f(x) + \Delta}{x+1} = \frac{q}{x} = f$$

$$\frac{f(x) + \Delta}{x+1} = \frac{q}{x} = f \quad (الف)$$

$$\frac{f(x) + \Delta}{x+1} \rightarrow \frac{q}{x} = f$$

$$\frac{f(x) + \Delta}{x+1} = \frac{q}{x} = f \quad (ج)$$

$$\lim [f(x)] = [f] = q$$

$$\lim f(x) = f = q \quad (الف)$$

$$[\lim f(x)] = q$$

$$[\lim f(x)] = q \quad (ج)$$

$$\lim \left[\frac{f(x) + 1}{x} \right] = \left[\frac{f}{x} \right] = f$$

$$\lim \frac{f(x) + 1}{x} = \frac{f}{x} \quad (الف)$$

$$\left[\lim \frac{f(x) + 1}{x} \right] = \frac{f}{x}$$

$$\left[\lim \frac{f(x) + 1}{x} \right] = \frac{f}{x} \quad (ج)$$

$$(الف) \lim \frac{x - \infty}{x^2 - 9x + \infty} = \frac{x - \infty}{(x - \infty)(x - 1)}$$

$$\frac{1}{x} \rightarrow \frac{1}{x} = -\infty \quad (الف)$$

$$(ج) \lim \frac{x - \infty}{x^2 - 9x + \infty} \rightarrow \frac{x - \infty}{(x - \infty)^2} \rightarrow \frac{1}{x} \rightarrow \frac{1}{x} = -\infty$$

$$\frac{1}{x} \rightarrow \frac{1}{x} = -\infty$$

$$\lim [-f(x)] = [-f] \rightarrow -f^+ = 1 + 1\infty = 2\infty$$

$$-f^- = 1 + 1\infty = 2\infty$$

2

$$\ln \left[\frac{-1}{x^6} \right] \rightarrow x < -\frac{1}{19} \Rightarrow \frac{1}{x^6} > -5 \rightarrow \frac{1}{x^6} < 19$$

(c) (a)

$$-\frac{1}{x^6} > -19 \rightarrow \left[-19 \right] \checkmark = -19$$



(٩) الف)

$$\lim_{x \rightarrow 1} [x^3 - 3x^2 + 3]$$

$$x \rightarrow 1$$

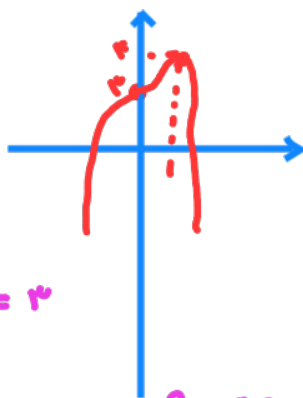
$$1^- \rightarrow [x^3] = 1$$

$$1^+ \rightarrow [x^3] = 1$$

$$y = [4x^3 - 3x^2 + 3] \rightarrow y' = 12x^2 - 6x \rightarrow y' = 0 \rightarrow 12x^2(1-x) = 0$$

$n=0, n=1$

		*		1
y'	-	-	+	+
y	↘	↘	↗	↗



$$\text{ا) } \lim_{x \rightarrow 1} [4x^3 - 3x^2 + 3] = [4] = 4$$

$$\text{ب) } \lim_{x \rightarrow 1} [4x^3 - 3x^2 + 3] = \begin{cases} x > 0 \rightarrow \lim[y] = [4] = 4 \\ x < 0 \rightarrow \lim[y] = [4] = 4 \end{cases}$$

(1, 0)

$$\lim_{x \rightarrow 0} [x^0 - x^{\frac{1}{2}} + x^0] \quad \begin{matrix} 0^+ \\ \cancel{x} \end{matrix} \rightarrow [x^-] = \cancel{x} \mu$$

$$\begin{matrix} - \\ 0 \end{matrix} \cancel{x} \rightarrow [x^-] = \cancel{x} \nu$$

CC/9

$$\lim_{x \rightarrow \infty} \frac{|x^2 - 1|}{x^2 - 1}$$

$$x^+ \rightarrow \frac{1}{x} = x^-$$

$$x^+ \rightarrow -\frac{1}{x} = -x^-$$

(الف) (✓)

$$\lim_{x \rightarrow \infty} \frac{|\sin x|}{\sin x}$$

$$x_+ \rightarrow \frac{-\sin x}{\sin x} = -\frac{1}{1} = -1$$

(ب) (✓)

$$x^- \rightarrow \frac{\sin x}{\sin x} = \frac{1}{-1} = -1$$

~~(sin) (sin x)~~

$$\lim_{x \rightarrow 0} \sqrt{\cos x}$$

$$\frac{x_0^+}{x} = \sqrt{0^+} = 0$$

(الف) (✓)

$$\frac{x_0^-}{x} = \sqrt{0^-} = \text{X}$$

(ب) (✓)

$$\lim_{x \rightarrow 0} \sqrt{x - \sqrt{x}}$$

$$0^+ \rightarrow \sqrt{x} > \sqrt{x} \text{ X}$$

$$0^- \rightarrow \sqrt{x} \text{ X}$$

(ب) (✓)



$$y = 5x^3 - 3x^2 + 2 \rightarrow y' = 15x^2 - 6x$$

الف

$$y' = 0 \rightarrow 15x^2(1-x) = 0 \rightarrow x = 0, x = 1, x = -1$$

x	-1	0	1
y'	-	+	-
y	↘	↗	↘

