

الف) $\lim_{x \rightarrow 2^+} f(x-2) = f(x-2) = 2$

ب) $\lim_{x \rightarrow 2^-} f(x-2) = f(x-2) = 2$ (5)

الف) $\lim_{x \rightarrow 2^+} f[x] - 2 = f(x[2,1]) - 2 = f(x-2) = 2$ (5)

ب) $\lim_{x \rightarrow 2^-} f[x] - 2 = f(x[1,2]) - 2 = f(x-1) - 2 = 1$ (5)

الف) $\lim_{x \rightarrow 2^+} [f(x-2)] \Rightarrow [f(x)] - 2 = 2$

ب) $\lim_{x \rightarrow 2^-} [f(x-2)] = f(x[2]) - 2 = 2$ (5)

الف) $[\lim_{x \rightarrow 2^+} f(x-2)] = 2$ [2] = 2

ب) $[\lim_{x \rightarrow 2^-} f(x-2)] = 1$ [1] = 1

الف) $\lim_{x \rightarrow 3} \frac{f(x-2)}{x-2} \rightarrow \frac{12}{0^+} = +\infty$ (5)

ب) $\lim_{x \rightarrow 3} \frac{f(x-2)}{(x-2)^2} \rightarrow \frac{12}{0^+} = +\infty$

الف) $\lim_{x \rightarrow 3} \frac{f(x-2)}{\sqrt{x-2}} \rightarrow \frac{12}{0^+} = +\infty$

ب) $\lim_{x \rightarrow 3} \frac{f(x-2)}{\sqrt{x^2-5x+6}} \rightarrow \frac{12}{0^+} = +\infty$ (5)

الف) $\lim_{x \rightarrow 3} \frac{f(x-2)}{x^2-7x+12} \rightarrow \frac{12}{0^-} = -\infty$

ب) $\lim_{x \rightarrow 3} \frac{f(x-2)}{[x-2]} \rightarrow \frac{12}{0^+} = +\infty$ (1,5)

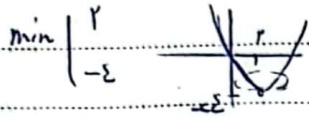
الف) $\lim_{x \rightarrow 3} [f(x)] + [-f(x)] \rightarrow 9 - 9 = 0$

ب) $\lim_{x \rightarrow -4} [-f(x)] + [f(x)] \rightarrow 22 - 22 = 0$ (1)

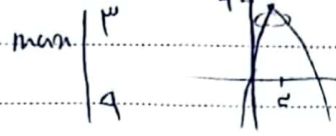
Subject :

Year. Month. Date. ()

a) $\lim_{n \rightarrow 2} [a^n - \epsilon n] = -\epsilon$



b) $\lim_{n \rightarrow 2} [4n - n^2] = 4$ (9)



a) $\lim_{n \rightarrow 2} \frac{|a^n - 2|}{a^n - \epsilon n + 2}$

\uparrow $\frac{a^n - 2}{(a^n - 2)(n-1)} = \frac{1}{n-1} = \frac{1}{1} = 1$ (1)

\downarrow $\frac{2 - a^n}{(n-2)(n-1)} = \frac{-1}{n-1} = \frac{-1}{1} = -1$ (1)

ب) $\lim_{n \rightarrow 1} \frac{a^n - [a^n]}{a^n - 1}$

\uparrow $\frac{a^n - a^n}{(a^n - 1)(n+1)} = \frac{1}{n+1} = \frac{1}{2}$

\downarrow $\frac{a^n}{(a^n - 1)(n+1)} = \frac{1}{0^-} = -\infty$

$\frac{-1}{+} \frac{1}{-} \frac{1}{+}$