تکلیف شماره ۲۵

۱) الف) $\lim_{x \to 2^+} 4x - 3 = 4(2) - 3 = 5$

ب) $\lim_{x \to 2^-} 4x - 3 = 4(2) - 3 = 5$

۲) الف) $\lim_{x \to 2^+} 4[x] - 3 = \underbrace{4(2)}_{\wedge} - 3 = 5$

ب) $\lim_{x \to 2^-} 4[x] - 3 = 4(1) - 3 = 1$

۳) الف) $\lim_{x \to 2^+} [4x - 3] = 5$

ب) $\lim_{x \to 2^-} [4x - 3] = 4$

۴) الف) $\lim_{x \to 2^+} 4x - 3 = 4(2) - 3 = 5$

ب) $\lim_{x \to 2^-} 4x - 3 = 4(2) - 3 = 5$

۵) الف) $\lim_{x \to 3} \frac{4x - 3}{x - 3}$

$$\begin{cases} 3^+ \to \frac{9}{0^+} = +\infty \\ 3^- \to \frac{9}{0^-} = -\infty \end{cases}$$

ب) $\lim_{x \to 3} \frac{4x - 3}{(x-3)^2}$

$$\begin{cases} 3^+ \to \frac{9}{0^+} = +\infty \\ 3^- \to \frac{9}{0^+} = +\infty \end{cases}$$

۶) الف) $\lim_{x \to 2^+} [4x - 3] = 5$

ب) $\lim_{x \to 2^-} [4x - 3] = 3$

s.a.m

⑥ الف) $\lim_{x \to 3} \frac{4x-3}{\sqrt{x-3}}$

$x \to 3^+ \longrightarrow \frac{9}{\sqrt{0^+}} = \frac{9}{0^+} = +\infty$

$x \to 3^- \longrightarrow \frac{9}{\sqrt{0^-}} \longrightarrow$ تعریف نشده

ب) $\lim_{x \to 3} \frac{4x-3}{\sqrt{x^2-4x+3}}$

$x \to 3^+ \longrightarrow \frac{9}{\sqrt{0^+}} = \frac{9}{0^+} = +\infty$

$x \to 3^- \longrightarrow \frac{9}{\sqrt{0^-}} =$ تعریف نشده

$x^2-4x+3 = (x-1)(x-3)$

	1	3	
	+	−	+

⑦ الف) $\lim_{x \to 3} \frac{4x-3}{x^2-7x+12}$

$x \to 3^+ \longrightarrow \frac{9}{0^-} = -\infty$

$x \to 3^- \longrightarrow \frac{9}{0^+} = +\infty$

$x^2-7x+12 = (x-3)(x-4)$

	3	4	
	+	−	+

⑧ الف) $\lim_{x \to 3} [3x] + [-2x]$

-6 — 3

$x \to 3^+ \longrightarrow 9 + (-7) = 2$

$x \to 3^- \longrightarrow 8 + (-6) = 2$

ب) $\lim_{x \to -4} [-5x] + [2x]$

-8 — -4

$x \to -4^+ \longrightarrow 22 + (-12) = 10$

$x \to -4^- \longrightarrow 23 + (-13) = 10$

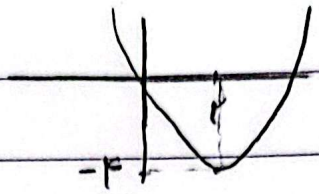
⑨ ب) $\lim_{x \to 3} \frac{4x-3}{[x-3]}$

$x \to 3^+ \longrightarrow \frac{9}{0} \longrightarrow$ تعریف نشده

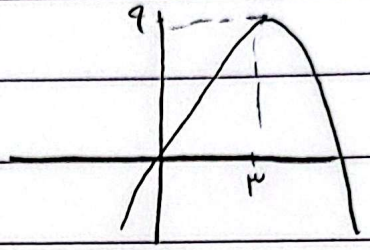
$x \to 3^- \longrightarrow \frac{9}{-1} = -9$

s.a.m

(١٤)



أ) $\lim_{x \to ٢} [x^٢ - ٤x] = (-٤)$



ب) $\lim_{x \to ٣} [٩x - x^٣] = (١٨)$

(١٥)

أ) $\lim_{x \to ٢} \frac{|x-٣|}{x^٢ - ٣x + ٢}$

$x \to ٢$

$٣^+ \rightarrow \frac{(x-٣)}{(x-١)(x-٢)} = \frac{١}{x-١} = (١)$

$٢^- \rightarrow \frac{-(x-٣)}{(x-١)(x-٢)} = (-١)$

ب) $\lim_{x \to ١} \frac{x - [x]}{x^٢ - ١}$

$x \to ١$

$١^+ \rightarrow \frac{(x-١)}{(x+١)(x-١)} = \frac{١}{x+١} = (\frac{١}{٢})$

$١^- \rightarrow \frac{x}{x^٢ - ١} = \frac{١}{٠^-} = (-\infty)$