29 تکلیف شماره ۵ - یازدهم دفتر B - به نام خداوند بخشنده مهربان - پریسا سادات طبیبی

① الف: $\lim_{x\to 2^+} 4x-3 = 8-3 = 5$ ① : $\lim_{x\to 2^-} 4x-3 = 8-3 = 5$

② الف: $\lim_{x\to 2^+} 4[x]-3 = 4(2)-3 = 8-3 = 5$ ② : $\lim_{x\to 2^-} 4[x]-3 = 4(1)-3 = 4-3 = 1$

③ الف: $\lim_{x\to 2^+} [4x-3] = [8^+-3] = [5^+] = 5$ ③ : $\lim_{x\to 2^-} [4x-3] = [8^--3] = [5^-] = 4$

④ الف: $\left[\lim_{x\to 2^+} 4x-3\right] = [5] = 5$ ④ : $\left[\lim_{x\to 2^-} 4x-3\right] = [5] = 5$

⑤ الف: $\lim_{x\to 3} \frac{4x-3}{x-3} \to 3^+: \frac{9}{0^+} = +\infty$, $3^-: \frac{9}{0^-} = -\infty$

⑤ : $\lim_{x\to 3} \frac{4x-3}{(x-3)^2} \to 3^+: \frac{9}{0^+} = +\infty$, $3^-: \frac{9}{0^+} = +\infty$

⑥ الف: $\lim_{x\to 3} \frac{4x-3}{\sqrt{x-3}} \to 3^+: \frac{9}{0^+} = +\infty$, $3^-: \frac{9}{\sqrt{0^-}} =$ تعریف نشده

⑥ : $\lim_{x\to 3} \frac{4x-3}{\sqrt{x^2-4x+3}} = \frac{4x-3}{\sqrt{(x-1)(x-3)}} \to 3^+: \frac{12}{\sqrt{(2)(0^+)}} = \frac{12}{0^+} = +\infty$, $3^-: \frac{12}{\sqrt{(2)(0^-)}}$ تعریف نشده

زیر رادیکال مثبت نمی‌شود

⑦ الف: $\lim_{x\to 3} \frac{4x-3}{x^2-7x+12} = \frac{4x-3}{(x-3)(x-4)} \to 3^+: \frac{9}{(0^+)(-1^{**})} = \frac{9}{0^-} = -\infty$, $3^-: \frac{9}{(0^-)(-1)} = \frac{9}{0^+} = +\infty$

⑦ : $\lim_{x\to 3} \frac{4x-3}{[x-3]} \to 3^+: \frac{9}{[0^+]} = \frac{9}{0}$ تعریف نشده , $3^-: \frac{9}{[0^-]} = -9$ ($[0^-] \to -1$)

⑧ الف: $\lim [3x]+[-2x] \to 3^+: [9^+]+[-6^-] = 9-7 = 2$, $3^-: [9^-]+[-6^+] = 8-6 = 2$

$x\to 3 \Rightarrow x>3 \Rightarrow -2x<-6$

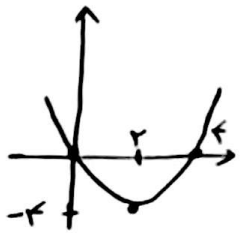
$\hookrightarrow x<3 \to -2x>-6$

$\ulcorner x>9 \to -4x<24$, $x<-6 \to -4x>24$

⑧ : $\lim_{x\to -6} [-4x]+[2x] \to -6^+: [24^-]+[-12^+] = 23-12 = 11$, $-6^-: [24^+]+[-12^-] =$

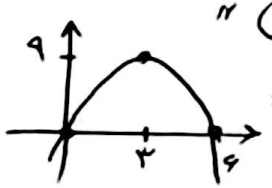
$= 24-13 = 11$

⑨ الف : $\lim_{x\to 2}[x^2-4x] \to \frac{-b}{2a}=\frac{4}{2}=2 \searrow x_{min}$ $\quad 4-8=-4 \swarrow y_{min}$ $\Rightarrow$



$\Rightarrow \lim_{x\to 2}[x^2-4x]$ $\nearrow 2^+ = \boxed{-4}$ $\quad \searrow 2^- = \boxed{-4}$

⑨ : $\lim_{x\to 4}[6x-x^2] \to \frac{-b}{2a}=\frac{-6}{-2}=3 \searrow x_{min}$ $\quad 18-9=9 \swarrow y_{min}$ $\Rightarrow$



$\Rightarrow \lim_{x\to 3}[6x-x^2]$ $\nearrow 3^+ = \boxed{8}$ $\quad \searrow 3^- = \boxed{8}$

"طبق شکل"

⑩ الف : $\lim_{x\to 2} \frac{|x-2|}{x^2-3x+2} \to 2^+ : \frac{x-2}{(x-1)(x-2)} = \frac{1}{1} = \boxed{1}$, $2^- : \frac{-(x-2)}{(x-1)(x-2)} = \boxed{-1}$

⑩ : $\lim_{x\to 1} \frac{x-[x]}{x^2-1} \to 1^+ : \frac{x-1}{x^2-1} = \frac{(x-1)}{(x-1)(x+1)} = \boxed{\frac{1}{2}}$, $1^- : \frac{x}{x^2-1} = \frac{1}{0^-} = \boxed{-\infty}$