

نام و نام خانوادگی پاسخنامه تشریحی تکلیف شماره ۱.۸... کلاس بداند

$$\lim_{x \rightarrow 2} = \lim_{x \rightarrow 2^+} = \lim_{x \rightarrow 2^-} \left\{ f(x) = \frac{4+5}{2+1} = \frac{9}{3} = 3 \right. \quad \text{محدود}$$

ج. = اف. = ب.

$$\lim_{x \rightarrow \infty} \frac{2x+7}{[x^2]} = \frac{2x+7}{\infty} = \text{تقریب شده} \quad \text{محدود}$$

$$\text{اف) } \lim_{x \rightarrow 3^-} = 4(3) - 2 = 10$$

$$\text{ب) } \lim_{x \rightarrow 3^-} = [4(3) - 2] = [10^-] = 9$$

$$\text{ج. د) } [\lim_{x \rightarrow 3^+} 4x - 2] = [\lim_{x \rightarrow 3^-} 4x - 2] = [10] = 10 \quad \text{محدود}$$

$$\text{اف) } \lim_{x \rightarrow 3^-} = \frac{3(2)+1}{2} = \frac{7}{2} = 3.5$$

$$\text{ب) } \lim_{x \rightarrow 3^-} : \left[\frac{3(2)+1}{2} \right] = [3.5^-] = 3 \quad \text{۱۷۵}$$

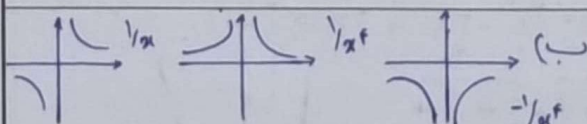
$$\text{ج و د) } \left[\lim_{x \rightarrow 3^-} \frac{3x+1}{2} \right] = \left[\lim_{x \rightarrow 3^+} \frac{3x+1}{2} \right] = 5 \quad \text{محدود}$$

$$x^2 - 4x + 4 = (x-2)^2 \quad \text{ب)}$$

$$\begin{aligned} \lim_{x \rightarrow 2^+} \frac{-1}{0^+} &= -\infty \\ \lim_{x \rightarrow 2^-} \frac{-1}{0^+} &= -\infty \end{aligned} \quad \text{محدود}$$

$$x^2 - 4x + 4 = (x-2)(x-2) = 0$$

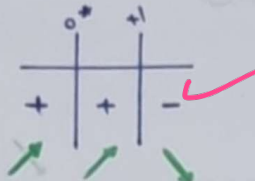
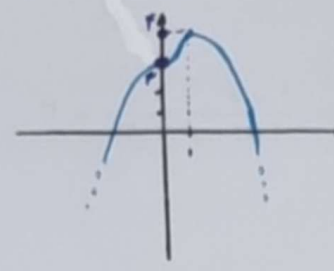
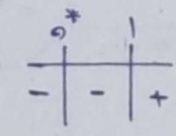
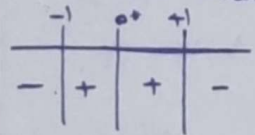
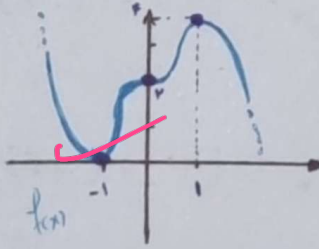
$$\begin{aligned} \frac{x^2 - 4x + 4}{(x-2)(x-2)} &= \frac{1}{x-2} \\ \lim_{x \rightarrow 2^+} \frac{1}{0^+} &= +\infty \\ \lim_{x \rightarrow 2^-} \frac{1}{0^+} &= -\infty \end{aligned} \quad \text{محدود}$$



$$\lim_{x \rightarrow (-1)^-} \left[\frac{-1}{x^2} \right] = [-1^+] = -1$$

$$\lim_{x \rightarrow -4^+} : [9^-] - [-15^+] = 9 + 15 = 24$$

$$\lim_{x \rightarrow -4^-} : [9^+] - [-15^-] = 9 + 15 = 24$$

$fx^3 - 3x^2 + 3 = 0$ $f'(x) = 3x^2 - 6x = 3x^2(1-x)$  	$\lim_{x \rightarrow 1} [f(x)] = 3$ $\lim_{x \rightarrow 0^+} [f(x)] = 3$ $\lim_{x \rightarrow 0^-} [f(x)] = 3$
$\text{الف) } \lim_{x \rightarrow 2^+} \frac{x^2 - 4}{x^2 - 4} = \frac{(x-2)(x+2)}{(x-2)(x+2)}$ $= \frac{12}{4} = 3$ $\text{ب) } \lim_{x \rightarrow 2^-} \frac{x^2 - 4}{x^2 - 4} = -3$	$\text{ب) } \lim_{x \rightarrow \pi^+} \frac{ \sin x }{\sin x} = \frac{-\sin x}{\sin x}$ $= \frac{-1}{1 \cos x} = -1$ $\lim_{x \rightarrow \pi^-} \frac{\sin x}{\sin x} = 1$
$\text{الف) } \lim_{x \rightarrow \frac{\pi}{2}^+} \sqrt{\cos x} = \sqrt{0^+} = 0$ $\text{ب) } \lim_{x \rightarrow \frac{\pi}{2}^-} \sqrt{\cos x} = \sqrt{0^-} = 0$	$\text{ب) } \lim_{x \rightarrow 0^-} \sqrt{x - 2\sqrt{x}} = 0$ $\lim_{x \rightarrow 0^+} \sqrt{x - 2\sqrt{x}} = 0$
$\text{الف) } \lim_{x \rightarrow 0^+} [\sin x] = 0$ $\lim_{x \rightarrow 0^+} \frac{1}{x^2 - x^2} = \frac{1}{0^-} = -\infty$ $x^3 - x^2 = x^2(x-1)$ 	$\text{ب) } \lim_{x \rightarrow 2^+} \frac{x^2 - 4}{x^2 - 4} = \frac{(x-2)(x+2)}{(x-2)(x+2)} = x+2$ $= 4$ $\lim_{x \rightarrow 2^-} \frac{x^2 - 4}{x^2 - 4} = \frac{4-4}{4-4} = 1$
$f'(x) = 12x^2 - 12x = 12x^2(1-x)$  	$f'(x) = 12x^2 - 12x = 12x^2(1-x)$ 