

$$\text{الف) } \lim_{x \rightarrow 2} \frac{2x+5}{x+1} = \frac{9}{3} = \boxed{3}$$

$$\text{ج) } \lim_{x \rightarrow 2} \frac{2x+5}{x+1} = \frac{9}{3} = \boxed{3}$$

$$\text{ب) } \lim_{x \rightarrow 2} \frac{2x+5}{x+1} = \frac{9}{3} = \boxed{3}$$

$$\text{د) } \lim_{x \rightarrow 0} \frac{[x+V]}{[x^2]} = \frac{V}{0} = \infty \rightarrow \text{صدازد}$$

$$\text{الف) } \lim_{x \rightarrow 3} f[x]-2 = f[3]-2 = 8-2 = \boxed{6}$$

$$\text{ب) } \lim_{x \rightarrow 3} [f x - 2] = \boxed{9}$$

$$\text{ج) } \left[\lim_{x \rightarrow 3} f x - 2 \right] = \boxed{10}$$

$$\text{د) } \left[\lim_{x \rightarrow 3} f x - 2 \right] = \boxed{10}$$

$$\text{الف) } \lim_{x \rightarrow 2} \frac{f[x]+1}{f} = \boxed{3/5}$$

$$\text{ج) } \left[\lim_{x \rightarrow 2} \frac{f x + 1}{f} \right] = \boxed{5}$$

$$\text{ب) } \lim_{x \rightarrow 2} \left[\frac{f x + 1}{f} \right] = \boxed{4}$$

$$\text{د) } \left[\lim_{x \rightarrow 2} \frac{f x + 1}{f} \right] = \boxed{5}$$

$$\text{الف) } \lim_{x \rightarrow 1} \frac{x-5}{x^2-x+6} = \frac{x-5}{(x-5)(x+1)} = \frac{1}{(x+1)}$$

$$\begin{aligned} \text{برای } x^+ &= \frac{1}{1+} = +\infty \\ \text{برای } x^- &= \frac{1}{1-} = -\infty \end{aligned}$$

$$\text{ب) } \lim_{x \rightarrow 3} \frac{x-4}{x^2-9x+9} = \frac{x-4}{(x-3)^2} \begin{cases} x^+ \\ x^- \end{cases} \rightarrow \frac{-1}{0^+} = \boxed{-\infty}$$

$$\text{الف) } \lim_{x \rightarrow -2} [-3x] - [5x] = \begin{aligned} & \rightarrow x^+ = 8 - (-10) = \boxed{23} \\ & \rightarrow x^- = 9 - (-16) = \boxed{25} \end{aligned}$$

$$\text{ب) } \lim_{x \rightarrow (-\frac{1}{4})^-} \left[\frac{-1}{x^2} \right] \rightarrow x < -\frac{1}{4} \rightarrow x^2 > \frac{1}{16} \rightarrow \frac{1}{x^2} < 16 \rightarrow \boxed{-\frac{1}{x^2} > -16}$$

$$\rightarrow = [-16^+] = \boxed{-16}$$

$\lim_{x \rightarrow 1} [4x^3 - 2x^2 + 3] \xrightarrow{\text{فیلتر}} f(x), 12x^2 - 4x$

$\begin{aligned} & \xrightarrow{x \rightarrow 1^+} [f] = 3 \\ & \xrightarrow{x \rightarrow 1^-} [f] = 3 \end{aligned}$

$\lim_{x \rightarrow 1} [4x^3 - 2x^2 + 3] \xrightarrow{x \rightarrow 1^+} [f] = 3$
 $\xrightarrow{x \rightarrow 1^-} [f] = 3$

$\lim_{x \rightarrow 2} \frac{x^2 - 8}{x^2 - 4} \xrightarrow{x \rightarrow 2^+} \frac{x^2 - 8}{x^2 - 4} \xrightarrow{\text{HOP}} \frac{2x^2}{2x} = 2$

$\lim_{x \rightarrow 2} \frac{x^2 - 8}{x^2 - 4} \xrightarrow{x \rightarrow 2^-} \frac{x^2 - 8}{x^2 - 4} \xrightarrow{\text{HOP}} \frac{-2x^2}{2x} = -2$

$\lim_{x \rightarrow \pi} \frac{|\sin x|}{\sin x} \xrightarrow{x \rightarrow \pi^+} \frac{-\sin}{\sin \cos} = \frac{-1}{\pi - 1} = -\frac{1}{\pi}$
 $\xrightarrow{x \rightarrow \pi^-} \frac{\sin}{\sin \cos} = \frac{1}{\pi - 1} = \frac{1}{\pi}$

$\lim_{x \rightarrow \frac{\pi}{2}} \sqrt{\cos x} \xrightarrow{x \rightarrow \frac{\pi}{2}^+} \sqrt{\cos} = 0$

$\lim_{x \rightarrow 1} \sqrt{x - 2\sqrt{x}} \xrightarrow{x \rightarrow 1^+} \sqrt{\cos} \rightarrow 0$
 $\xrightarrow{x \rightarrow 1^-} \sqrt{\cos} \rightarrow 0$

$\lim_{x \rightarrow 1} \frac{f(x) [\sin x]}{x^2 - x^2} = \frac{[1]}{0} = \frac{1}{0} = -\infty$

$\lim_{x \rightarrow 1} \frac{x^2 - [x^2]}{x - [x]} \xrightarrow{x \rightarrow 1^+} \frac{x^2 - 1}{x - 1} = x + 1 = 2$
 $\xrightarrow{x \rightarrow 1^-} \frac{x^2 - 1}{x - 1} = 2$

