

الف:  $f(x) - 3 = 5$  ✓

$\therefore f(x) - 3 = 5$  ✓

(۲)

الف:  $[f^+] = 2$

$f(x) - 3 = 5$  ✓

ب:  $[f^-] = 1$

$f(x) - 3 = 1$  ✓

(۲)

الف:  $[f(x^+) - 3] = [5^+] = 5$  ✓

ب:  $[f(x^-) - 3] = [5^-] = 4$  ✓

(۲)

الف:  $\lim_{x \rightarrow 0^+} f(x) - 3 = 5$  ✓  
 $[5] = 5$

$\therefore \lim_{x \rightarrow 0^+} f(x) - 3 = 5$  ✓  
 $[5] = 5$

(۲)

الف:

$\lim_{x \rightarrow 0^+} \frac{f(x) - 3}{x - 3} = \frac{9}{0^+} = +\infty$  ✓  
 $\lim_{x \rightarrow 0^-} \frac{f(x) - 3}{x - 3} = \frac{9}{0^-} = -\infty$  ✓

ب:

$\lim_{x \rightarrow 0^+} \frac{f(x) - 3}{(x - 3)^2} = \frac{9}{0^+} = +\infty$  ✓  
 $\lim_{x \rightarrow 0^-} \frac{f(x) - 3}{(x - 3)^2} = \frac{9}{0^+} = +\infty$  ✓

(۲)

الف:

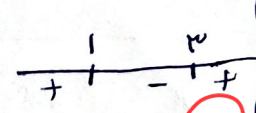
$$\lim_{x \rightarrow 0} \frac{x^2 - x}{x^2 - x} = \frac{0}{0^+} = +\infty$$

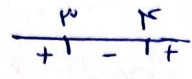
ن =

ب:

$$\lim_{x \rightarrow 0} \frac{(x-1)(x-3)}{x^2 - x} = \frac{0}{0^+} = +\infty$$

ن =



الف:  $(x-2)(x-3)$  

$$\lim_{x \rightarrow 0^+} \frac{9}{0^-} = -\infty$$

$$\lim_{x \rightarrow 0^-} \frac{9}{0^+} = +\infty$$

ب:

$$\lim_{x \rightarrow 0^+} \frac{9}{x^2 - 3} = \frac{9}{0} = \text{ن =}$$

$$\lim_{x \rightarrow 0^-} \frac{9}{x^2 - 3} = \frac{9}{-1} = -9$$

الف:

$$\lim_{x \rightarrow 2^+} [9^+] + [-4^-] = 5$$

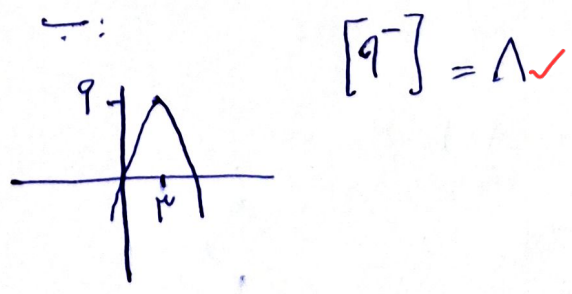
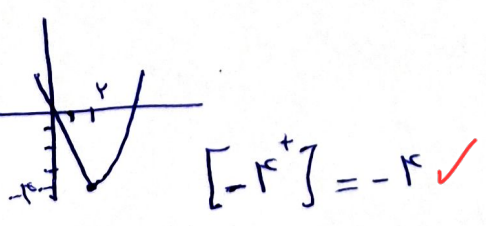
$$\lim_{x \rightarrow 2^-} [9^-] + [-4^+] = 5$$

ب:

$$\lim_{x \rightarrow 2^+} [x^2] + [-1x] = 11$$

$$\lim_{x \rightarrow 2^-} [x^2] + [-1x] = 11$$

الف:



الف:

$$x^+ = \frac{x-2}{(x-2)(x-1)} = \frac{1}{x-1} = 1$$

$$x^- = \frac{2-x}{(x-2)(x-1)} = \frac{-1}{x-1} = -1$$

ب:

$$1^+ \rightarrow \frac{1^+}{0^+} = +\infty$$

اول باير تعریف برائت مشخصه!

$$1^- \rightarrow \frac{1^-}{0^-} = -\infty$$

$x \rightarrow 1^+ : \frac{x-2}{(x-1)(x+1)} = \frac{1}{2}$

