

$\Rightarrow a(x-r_1)(x-r_2)$

$(x-1)(x-3) \Rightarrow x^2 - 3x - x + 3$  سوال ۱

$x^2 - 4x + 3$

$a = +\epsilon \quad b = 3$

$a + b = \epsilon + 3 = 3$  ✓

$x^2 - ax + b$

$y = 0 \quad x = \epsilon \quad x = -1$

$y > 0 \rightarrow x < \epsilon +$

$y < 0 \rightarrow x > \epsilon -$

$\Rightarrow [(1-3)x + (\omega-1)] (x-3)^2$  سوال ۲

$\Rightarrow (-x + \epsilon)(x + 1)^2$

$k = 1$

$m = \omega$

$n = -1/\omega$

$\frac{m}{h} + k \Rightarrow \frac{\omega}{-1/\omega} + 1 = -\omega + 1 = -1\epsilon$  ✓

$-\frac{1}{\omega} x^2 + 2x + 4 > \omega \Rightarrow -\frac{1}{\omega} x^2 + 2x + 4 - \omega > 0$  سوال ۳

$(-\frac{1}{\omega} x^2 + 2x + 4 - \omega > 0) \times \omega \Rightarrow x^2 - 4x - \omega < 0$

$(x - \omega)(x + 1) < 0 \rightarrow \begin{matrix} x = -1 \\ x = \omega \end{matrix}$

$(-1, \omega) \Rightarrow b - a \Rightarrow \omega - (-1) = 4$  ✓

$x^3 - 3x^2 - x + 3 \rightarrow x^2(x-3) - 1(x-3)$  سوال ۴

$(x^2 - 1)(x - 3)$

$(x-1)(x+1)(x-3)$

$(0, 1), (1, 3), (3, +\infty)$

با  $n$  و  $r$   $\rightarrow$   $\rightarrow$   $\rightarrow$

$\frac{(a+b)}{\omega} = \frac{1+\omega}{\omega} = 2$

$f(x) \Rightarrow 2^{\omega} - \omega(\epsilon) - 2 + 3 \Rightarrow -\omega$  ✓

$1 - 12 - 2 + 3$

$$(a-1)x^p + (a-1)x + 1 < 0$$

سوال ۱۸

$x=1$   
 ۲ را در احوال  
 بودن به از آن  
 هر ۲ منفی  
 است.

$$a-1 + a-x + x < 0$$

$$2a-1 < 0 \rightarrow 2a < 1$$

$$a < \frac{1}{2}$$

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$$\frac{m(m^p + m)}{m-p} > 0 \rightsquigarrow \frac{m^p(m^p + 1)}{m-p} > 0$$

سوال ۴

$m^p \Rightarrow$  معادله منفی  $\rightarrow m \neq 0$

$m^p + 1 \Rightarrow$  معادله مثبت است

$m - p \Rightarrow m \neq p$

$m - p > 0$   
 $m > p$   
 $\Rightarrow m \neq 0$   
 معادله مثبت است

$(-\infty, p)$

$$(x-p)^p (x+p)^{-p} (x-1)^p \leq 0$$

$$(x^p + x + 1) (p-x)^p$$

$\Delta < 0$  تا  $x=2$

$x$	$-p$	$1$	$p$	$p$
$p$	+	-	+	-

جواب:  $(-\infty, -p] \cup (p, p)$

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$$\frac{px^p - px}{x^p + p} < p$$

$$px^p - px < p(x^p + p)$$

$$px^p - px - p(x^p + p) < 0$$

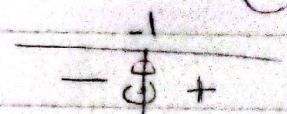
$$x^p - px - p < 0 \rightarrow (x-p)(x+p) < 0$$

$(-p, p) \rightarrow b-a = p - (-p) = 2p$

$$-1 < \frac{\mu x^p - \varepsilon x}{x+1} < 0$$

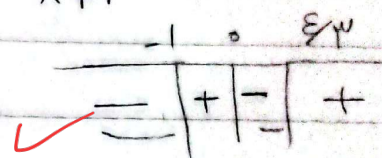
سؤال 9 ✓  
 $\Delta < 0$

$$0 < \frac{\mu x^p - \varepsilon x + 1 + x}{x+1} \Rightarrow 0 < \frac{\mu x^p - \mu x + 1}{x+1}$$



$$\frac{\mu x^p - \varepsilon x}{x+1} < 0 \Rightarrow \frac{x(\mu x^p - \varepsilon)}{x+1} < 0$$

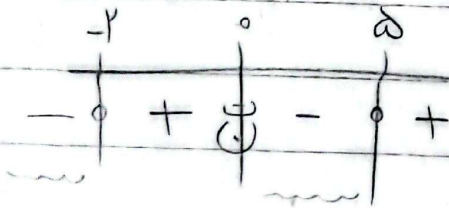
$x = \frac{\varepsilon}{\mu}$   
 $x = -1$



$$\frac{x^p - 1_0}{x} \leq \mu \rightarrow \frac{x^p - 1_0}{x} - \mu \leq 0$$

سؤال 10 ✓

$$\frac{x^p - 1_0 - \mu x}{x} \leq 0 \rightarrow \frac{(x - \omega)(x + \nu)}{x} \leq 0$$



$$\Rightarrow (-\infty, -\nu] \cup (\omega, +\infty)$$

سؤال 11 \*

①  $(-1, +\infty)$

②  $(-\infty, -1) \cup (0, \varepsilon/\mu)$

$$\} A \Rightarrow (-1, \varepsilon/\mu)$$

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«أنا أستاذ»

جبرای اینکه عبارت صوابه منفرجه باشه  $\Delta < 0$  و  $a < 0$

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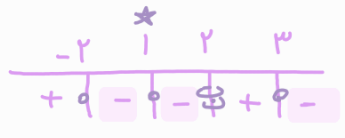
1  
 $a - 1 < 0 \rightarrow a < 1$

2  
 $\Delta < 0 \rightarrow (a-1)^2 - 4(a-1) < 0 \rightarrow (a-1) < 4 \rightarrow 1 < a < 5$

$a-1=t \rightarrow t^2-2t < 0 \rightarrow 0 < t < 2$

$1 \cap 2 = \emptyset$

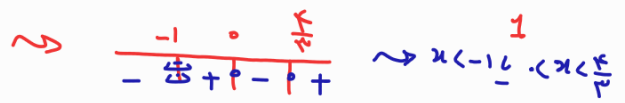
$\frac{(x^2-n-4)(x-1)^2}{(x^2-n+1)(x-n)^2} < 0$



$f(x) < 0$   
 $\hookrightarrow x \in [-2, 1) \cup [2, 3) \cup [3, +\infty)$

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$\frac{x^2 - 4x}{x+1} < 0 \rightarrow \frac{x(x-4)}{x+1} < 0$



1  
 $x < -1$  و  $x < \frac{4}{3}$

4

$\frac{x^2 - 2x}{x+1} > -1 \rightarrow \frac{x^2 - 2x + x + 1}{x+1} > 0$

$\Delta < 0$   
 $\frac{x^2 - x + 1}{x+1} > 0 \rightarrow x+1 > 0 \rightarrow x > -1$



$-1 < x < \frac{4}{3}$