

۲۴ اسفند ۱۳۹۷

گروه دخترانه دهم A

زهرا دهقان

$$x^2 - ax + b$$

$$1 < x < 3$$

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$$\begin{array}{cccc}
 & 1 & & 3 \\
 & | & & | \\
 + & \phi & - & \phi & + \\
 \hline
 & & & &
 \end{array}$$

$$\leftarrow 1 < x < 3$$

$$f(x) = a(x - r_1)(x - r_2)$$

$$\Rightarrow (x - 3)(x - 1) = x^2 - \epsilon x + \mu$$

$$-a = -\epsilon \rightarrow a = \epsilon$$

$$b = \mu$$

$$a + b = \epsilon + \mu = \sqrt{\quad}$$

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$$y = (k - 2)x + m - 1)(x - 2n)^2$$

$$\frac{m}{n} + k = 8 \quad \text{--- } \beta_2$$

$$= \frac{1}{-1} + 1 = -1 \quad \text{--- } \beta_1$$

$$x = -1 \rightarrow -1 - 2n = 0$$

$$n = -\frac{1}{2}$$

x	-1	2
P	$+$	$-$

$$x = 2 \rightarrow (k - 2)2 + m - 1 = 2k - 4 + m - 1 = 2k + m - 5 = 0$$

$$= 2k + m - 5 = 0$$

$$x = 10 \rightarrow$$

$$m = 5$$

$$1 = k$$

$$m = 5 - 2k$$

$$(k - 2)10 + m - 1$$

$$= 10k - 20 + m - 1 < 0$$

$$9 - 2k$$

$$k = 1$$

سوالیوں کے جوابات

$$9k - 2 < 0 \rightarrow k < 2$$

$$-\frac{1}{4}x^2 + 2x + 4 > \frac{5}{4}$$

$$-\frac{1}{4}x^2 + 2x + 4 - \frac{5}{4} > 0$$

$$-\frac{1}{4}x^2 + 2x + \frac{11}{4} > 0 \xrightarrow{\times -4} x^2 - 8x - 11 < 0$$

$$(x + 1)(x - 11) < 0$$

$$x = -1$$

$$x = 11$$

-1	11
$+$	$-$
$+$	$+$

$$\begin{cases} 11 - (-1) = 12 \\ -1 - (11) = -12 \end{cases}$$

$$\begin{matrix} (-1, 11) \\ \downarrow \quad \downarrow \\ a \quad \quad b \\ b - a = 12 \end{matrix}$$

$x) \quad f(x) = x^3 - 3x^2 - x + 3$

$f(x) < 0$ دائماً

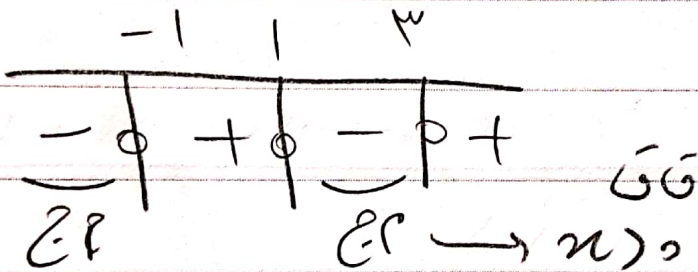
$$x^3 - 3x^2 - x + 3 < 0$$

$$x^2(x-3) - (x-3) < 0$$

$$(x-3)(x^2-1) < 0$$

$$x=3$$

$$x^2=1 \rightarrow x=\pm 1$$



دائماً

$$(1, 3) \rightarrow \frac{1+3}{2} = 2$$

$$(a, b)$$

$$f(2) = 1 - 12 - 2 + 3 = -10$$

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$$(a-1)x^2 + (a-1)x + 1$$

$$\Delta < 0$$

$$(a-1)^2 - 4(a-1) < 0$$

$$a^2 + 1 - 4a - 4a + 4 < 0$$

$$a^2 - 8a + 5 < 0$$

$$(a-1)(a-5) < 0$$

$$\hookrightarrow a=1 \quad \hookrightarrow a=5$$

$$\begin{array}{r} 1 \quad 5 \\ + \quad - \\ \hline + \quad - \end{array}$$

$$(1, 5)$$

$$a < 0$$

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

$$\textcircled{1}, \textcircled{2} \rightarrow \emptyset$$

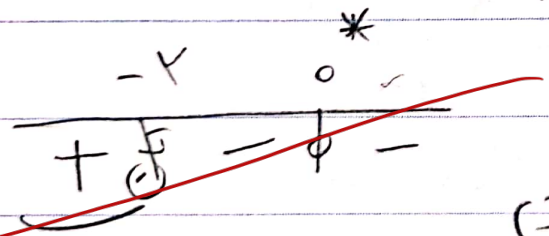
1, 2, 3

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

داده
میشود $\Delta < 0$
 $a > 0$

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

میشود $m = 2$ یا $m \neq 2$ $m > 2$



$m^2 = -1$
(میشود) غیر ممکن

پس (میشود) $(-\infty, 2)$

~~$(-\infty, 2)$~~

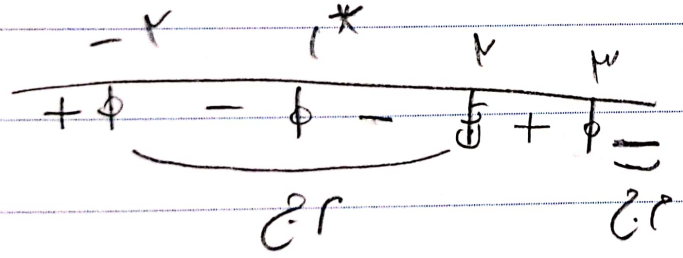
$$\frac{(x^p - x - y)(x - 1)^p}{(x^p + x + 1)(x - y)^p} \leq 0 \rightarrow x = 1 \text{ is a root}$$

✓

$$\Delta < 0 \text{ (no roots), } x^p + x + 1 > 0$$

$$(x - \mu)(x + \nu)$$

$$x = \mu \rightarrow x = -\nu$$



$$[-\nu, \mu) \cup [\mu, +\infty)$$

$$\frac{\gamma n^{\gamma} - \gamma n}{n^{\gamma} + \epsilon} < \gamma \rightarrow \frac{\gamma n^{\gamma} - \gamma n - \gamma}{n^{\gamma} + \epsilon} < 0$$

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1

$$\frac{\gamma n^{\gamma} - \gamma n}{n^{\gamma} + \epsilon} - \frac{\gamma n^{\gamma} + \gamma}{n^{\gamma} + \epsilon} < 0$$

$n = \epsilon$

$n = -\gamma$

$$\frac{n^{\gamma} - \gamma n - 1}{n^{\gamma} + \epsilon} < 0 \rightarrow \frac{(n + \gamma)(n - \epsilon)}{n^{\gamma} + \epsilon} < 0$$

$$\frac{-\gamma \quad \epsilon}{+ \quad - \quad - \quad +}$$

2.1 (-\gamma, \epsilon)

$$n^{\gamma} = -\epsilon$$

جواب نه

$$\epsilon - (-\gamma) = 4$$

جواب

PITICO

$$-1 < \frac{3x^2 - \epsilon x}{x+1} < 0$$

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1, 2, 3

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$$\star: \frac{3x^2 - \epsilon x}{x+1} > -1 \rightarrow \frac{3x^2 - \epsilon x}{x+1} + 1 > 0$$

$$\frac{3x^2 - \epsilon x}{x+1} + \frac{x+1}{x+1} > 0 \rightarrow \frac{3x^2 - \epsilon x + x + 1}{x+1} > 0$$

① $3x^2 - \epsilon x + x + 1 > 0$

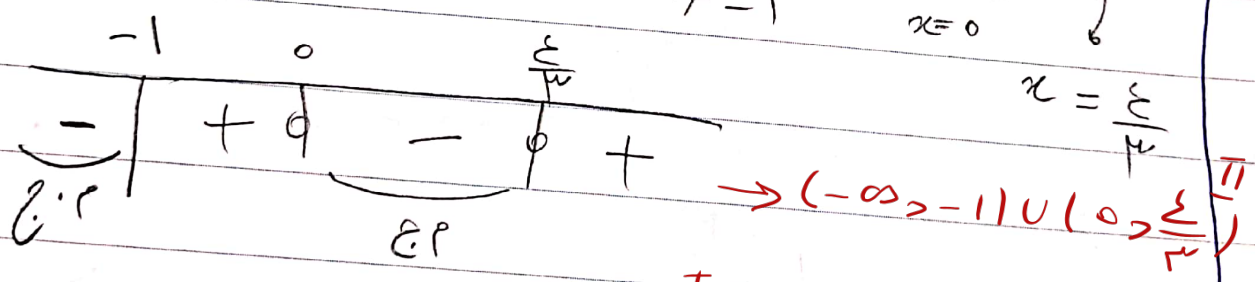
② $x+1 > 0$

③ $3x^2 - \epsilon x + x + 1 > 0$

④ $x+1 > 0$

$$\star\star: \frac{3x^2 - \epsilon x}{x+1} < 0 \rightarrow \frac{3x^2 - \epsilon x}{x+1} = 0 \rightarrow x(3x - \epsilon) = 0$$

$x \neq -1$ $x = 0$ $x = \frac{\epsilon}{3}$



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$\rightarrow (-\infty, \frac{\epsilon}{3})$

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$$\frac{x^2 - 10}{x} \leq 4 \rightarrow \frac{x^2 - 10}{x} - 4 \leq 0$$

$$\frac{x^2 - 10}{x} - \frac{4x}{x} \leq 0 \rightarrow \frac{x^2 - 4x - 10}{x} \leq 0$$

$$x = 0 \leftarrow$$

$$\rightarrow x = -4$$

$$\frac{(x - 0)(x + 4)}{x} \leq 0$$

$$\rightarrow 0 = x$$

$$\frac{-4 \quad 0 \quad 0}{- \phi + \phi - \phi +}$$

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$$(-\infty, -4] \cup (0, 0]$$

$$(-\infty, -4] \cup (0, 0]$$