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سایه



$$x^2 - ax + b \rightarrow x^2 - \xi x + \eta$$

$$a = \xi$$

$$b = \eta$$

$$a < b \Rightarrow \eta < \xi$$

(2)



$$x^2 - ax \xrightarrow{a=1} x^2 - x = 0 \rightarrow x = -\frac{1}{\eta}$$

$$(k+1)x + m - 1 \xrightarrow{a=\xi} \xi(k+1) + m - 1 = 0 \rightarrow \xi k + m = 1$$

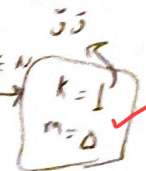
$$\partial k - 1 = m - 1 < 0$$

$$\partial k + m < 1$$

$$\xi \eta \xi / \begin{matrix} k=1 \\ m=1 \end{matrix}$$

$$\xi \eta \xi / \begin{matrix} k=2 \\ m=-1 \end{matrix}$$

$$\xi \eta \xi / \begin{matrix} k=3 \\ m=-2 \end{matrix}$$



$$\frac{m}{\eta} + k \rightarrow \frac{\partial}{-\eta} + 1 = -1 \xi$$

(2)

$$-\frac{1}{\eta} x^2 + \xi x + \eta = 0 \rightarrow -\frac{1}{\eta} x^2 + \xi x + \frac{\xi}{\eta} = 0$$

$$\rightarrow -x^2 + \xi \eta x + \xi = 0$$

$$x^2 - \xi \eta x - \xi = 0$$

$$\rightarrow (x - \partial)(x + 1) = 0$$

$$(a, b) = (-1, \partial) \checkmark$$

$$\partial - (-1) = \partial + 1 = -1$$

(2)

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

مع فرایب



$$(a, b) = (1, 3) \checkmark$$

نقطه میانی = 2

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

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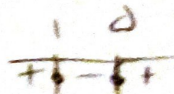
$$a - 1 < 0 \rightarrow a < 1$$

$$0 < 0 \rightarrow a^2 - 2a + 1 - \xi (a-1) < 0 \rightarrow a^2 - 2a + 1 - \xi a + \xi < 0$$

$$\rightarrow \frac{(a-\partial)(a-1)}{\partial} < 0$$

$$(1, \partial) \cap (-\infty, 1) = \emptyset \checkmark$$

$$(-\infty, 1) \cap (1, \partial) = \emptyset \checkmark$$



$$\frac{a^2 - 2a + 1}{a - \xi}$$



$$\checkmark m > 2$$

(2)

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



$$[-r, r) \cup [r, +\infty) \checkmark$$

(7) -v

$$\frac{r x^r - r x}{x^r + 1} = r \rightarrow r x^r - r x = r x^r + 1 \rightarrow x^r - r x - 1 = 0$$

$$(x-1)(x+r) = 0$$



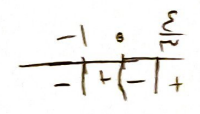
$$r - (-r) = 2r \checkmark$$

$$(a, b) = (-r, r) \checkmark$$

(8) -^

$$\left\langle \frac{r x^r - r x}{x+1} + 1 \right\rangle \rightarrow \left\langle \frac{r x^r - r x + x + 1}{x+1} \right\rangle \rightarrow \left\langle \frac{r x^r - r x + 1}{x+1} \right\rangle$$

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



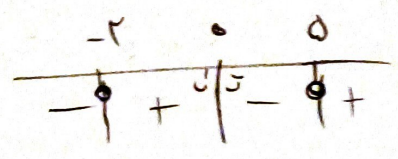
$$(-1, 1) \cup (1, \frac{r}{r-1}]$$

$$\boxed{(0, \frac{r}{r-1})} \checkmark$$

(9) -9

$$\frac{x^r - 1}{x} \leq r \rightarrow \frac{x^r - 1}{x} - r \leq 0 \rightarrow \frac{x^r - r x - 1}{x} \leq 0$$

$$(x-0)(x+r) \leq 0$$



$$(-\infty, -r] \cup (0, 0] \checkmark$$

(10) -10