

کتاب ضروری

۲۰

$$x^2 - ax + b \rightarrow a(x-1)(x-3) \rightarrow a-1 \rightarrow x^2$$

①

$$a=4 \quad b=3 \Rightarrow x^2 - 4x + 3 \Rightarrow a+b=7$$

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$$y = ((k-2)x + m-1)(x-3n)^2$$

②

$$\rightarrow 1 = \text{ریشه مضاعف } x \rightarrow -1-3n=0 \Rightarrow 3n=-1 \rightarrow n=-\frac{1}{3}$$

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$$\text{ریشه عبارت} \Rightarrow 4 \rightarrow k-2=0 \Rightarrow k=2 \Rightarrow k=1$$

درجه یک

لجوجن طبیعی

$$(ax+b) \rightarrow (x+m-1) \Rightarrow 4 \text{ ریشه}$$

$$\frac{m}{n} + k = \frac{d}{-\frac{1}{3}} + 1 = -14$$

$$-1-m-1=0 \quad m=d$$

$$y = \frac{-1}{4}x^2 + 2x + 4 > \frac{v}{p}$$



③

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$$y > \frac{v}{p}$$

$$x-2 \left( -\frac{1}{4}x^2 + 2x + 4, d > 0 \right)$$

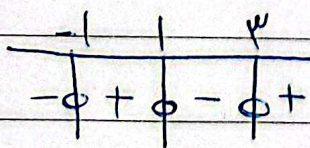
$$x^2 - 4x - d < 0 \rightarrow (x-d)(x+1) < 0$$

$$-1 < x < d$$

$$(-1, d) \quad b-a = d - (-1) = [4]$$

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

④



$$\left. \begin{array}{l} x > 0 \\ f(x) < 0 \end{array} \right\} \Rightarrow (1, 3)$$

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

[-3]

$$\text{نقطه میانی} = \frac{1+3}{2} = 2$$

PASARGAD

DATE: .....

کتاب ضروری

Year:

Month:

Date:

Subject : ( ..... )

$$(a-1)x^2 + (a-1)x + 1 < 0 \quad (1) \text{ (a)}$$

$$\begin{cases} a-1 < 0 \rightarrow a < 1 & (19a) \\ \Delta < 0 \rightarrow (a-1)^2 - 4(a-1) = (a-1)(a-5) < 0 \rightarrow \frac{1}{+} \frac{a}{-} \end{cases}$$

$$\rightarrow (1) \wedge (2) = \boxed{\emptyset}$$

$$\frac{m(m^2+m)}{m-2} > 0 \rightarrow \frac{m^2(m^2+1)}{m-2} > 0$$

$\begin{array}{c} \text{مضروب} \\ \text{مضروب} \\ \text{مضروب} \\ \text{مضروب} \end{array}$

$$\frac{+}{-} \frac{+}{-} \frac{+}{+} \frac{+}{+} \rightarrow (29+\infty)$$

$$\frac{(x^2-x-9)(x-1)^2}{(x^2+x+1)(2-x)^2} < 0 \rightarrow \frac{(x-3)(x+2)(x-1)^2}{(x^2+x+1)(2-x)^2} < 0$$

$\begin{array}{c} \text{مضروب} \\ \text{مضروب} \\ \text{مضروب} \\ \text{مضروب} \end{array}$

$$\frac{-}{+} \frac{+}{+} \frac{+}{-} \frac{+}{+} \rightarrow [-2, 2) \cup [3, +\infty)$$

$$f(x) = \frac{3x^2-2x}{x^2+4} < 2 \rightarrow f(x) < 2 \rightarrow \frac{3x^2-2x-2x^2-8}{x^2+4} < 0$$

$$x^2 - 2x - 8 < 0 \quad (x-4)(x+2) < 0$$

$$\frac{-}{+} \frac{+}{-} \frac{+}{+} \rightarrow (-2, 4)$$

$$b - a = 4 - (-2) = \boxed{6}$$

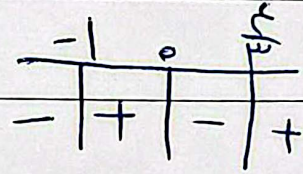
کتابخانه مرکزی

$$-1 < \frac{3x^2 - 4x}{x+1} < 0$$

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$$\textcircled{1} \frac{3x^2 - 4x}{x+1} < 0 \rightarrow \frac{x(3x-4)}{x+1} < 0$$



$$\rightarrow (-\infty, -1) \cup (0, \frac{4}{3})$$

$$\textcircled{2} -1 < \frac{3x^2 - 4x}{x+1} \rightarrow \frac{3x^2 - 4x + x + 1}{x+1} > 0 \xrightarrow{\text{همواره مثبت}} \rightarrow x+1 > 0 \quad x > -1$$

(-1, +\infty)

$$\textcircled{1} \cap \textcircled{2} \rightarrow \boxed{(0, \frac{4}{3})}$$

$$\frac{x^2 - 10}{x} \leq 0 \rightarrow \frac{x^2 - 3x - 10}{x} \leq 0 \quad \frac{(x-5)(x+2)}{x} \leq 0$$

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-	0	5	+
-	+	-	+

$$\rightarrow \boxed{(-\infty, -2] \cup (0, 5]}$$