

$x^2 - ax + b < 0 \Rightarrow \frac{1}{+\phi} \quad \frac{3}{-\phi+}$ $\begin{cases} b = p = 3 \\ a = s = 4 \end{cases}$

$\Rightarrow b+a = 7$ ✓

$y = ((k-2)x + m-1)(x-3n)$ $\frac{-1}{-\phi+} \quad \frac{4}{\phi-}$

$((k-2)x + m-1) = x+1 \Rightarrow 3n = 4 \Rightarrow n = \frac{4}{3}$ ضاعف * $\leftarrow 4$

$\Rightarrow K-2=1 \Rightarrow K=3$
 $\Rightarrow m-1=1 \Rightarrow m=2$

$\Rightarrow \frac{m}{n} + K = \frac{2}{4/3} + 3 = 1\frac{3}{4} + 3 = 4\frac{5}{4} = 4.5$

$a < x < b \Rightarrow x^2 - 2x(-\frac{1}{2}x^2 + 2x + 6) > \frac{7}{2}$

$\Rightarrow x^2 - 4x - 12 < -7 \Rightarrow x^2 - 4x - 5 < 0 \Rightarrow (x-5)(x+1) < 0$

$\Rightarrow -1 < x < 5$ $\Rightarrow b-a = 5 - (-1) = 6$ ✓ $\frac{-1}{+\phi} \quad \frac{5}{-\phi+}$

$x^3 - 3x^2 - x + 3 < 0 \Rightarrow (x+1)(x-1)(x-3) < 0$

$\Rightarrow f(2) = 8 - 12 - 2 + 3 = -3$ ✓ $(1, 3)$ $\leftarrow x > 0$

$\frac{-1}{-\phi+} \quad \frac{1}{\phi+} \quad \frac{3}{-\phi+}$

$x < 0 \Rightarrow a < 0 \Rightarrow a-1 < 0 \Rightarrow a < 1$

$\Delta < 0 \Rightarrow (a-1)^2 - 4(a-1) < 0 \Rightarrow a \in \emptyset$

$\Rightarrow (a-1)(a-5) < 0$ $\frac{1}{+\phi} \quad \frac{5}{-\phi+}$

$x = -1 \rightarrow (x-2)^p$ ریشه عبارت $\rightarrow -1-2x=0 \rightarrow x = \frac{1}{p}$

$x = 4 \rightarrow (k-2)x + m-1$ ریشه عبارت $\rightarrow k-8+m-1=0 \rightarrow k+m-9=0 \rightarrow m=9-k$

$x < 4 \rightarrow$ عبارت مثبت \rightarrow صریح و معنی $\rightarrow k-2x_0 \rightarrow k < 4 \rightarrow$ محدود طبیعی $\rightarrow k=1$

$\frac{m}{n} + k = \frac{9-k}{\frac{1}{p}} + 1 = -15 + 1 = -14$

سوال (۲) \leftarrow

$$\frac{m^2(m^2+1)}{m-2} > 0 \rightsquigarrow \frac{0^* \quad 2}{-\phi - \phi +}$$

$$2 < m \rightsquigarrow (2, +\infty) \quad \text{✓}$$

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$$\frac{(n-3)(n+2)(n-1)^2}{(n^2+n+1)(2-n)^3(n-2)^2}$$

$$\frac{-1 \quad 1 \quad 2 \quad 3}{+\phi - \phi - \phi + \phi -}$$

$$\rightarrow [-1, 1] \cup [1, +\infty)$$

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$$\frac{1^* \quad 2^* \quad 3}{4\phi + \phi + \phi -} \rightsquigarrow [3, +\infty)$$

①

$$\frac{3n^2-2n}{n^2+4} < 2 \rightsquigarrow 3n^2-2n-2n^2-8 < 0$$

$$n^2-2n-8 < 0$$

$$(n-4)(n+2) < 0 \rightsquigarrow \frac{-2 \quad 4}{+\phi - \phi +}$$

✓

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$$a < n < b \rightsquigarrow -2 < n < 4 \quad b-a = 6 \rightsquigarrow 4 - (-2) \quad \checkmark$$

$$0 \rightarrow \frac{3n^2+4n}{n+1} < 0 \rightsquigarrow \frac{n(3n+4)}{n+1} < 0 \rightsquigarrow \frac{-1 \quad 0 \quad 4/3}{-\phi + \phi - \phi +}$$

$$\textcircled{2} \rightarrow \frac{3n^2+n+2n+1}{n+1} > 0 \quad (-\infty, -1) \cup (0, 4/3)$$

$$\Rightarrow \frac{3n^2-3n+1}{n+1} > 0 \Rightarrow n > -1 \rightsquigarrow \bigcap \rightarrow (0, 4/3) \quad \checkmark$$

✓

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$$\frac{n^2-10}{n} \leq 3 \rightsquigarrow \frac{n^2-3n-10}{n} \leq 0 \rightsquigarrow \frac{(n-5)(n+2)}{n} \leq 0$$

$$\frac{-2 \quad 0 \quad 5}{-\phi + \phi - \phi +} \rightsquigarrow (-\infty, -2] \cup (0, 5] \quad \checkmark$$

✓

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