

$$\begin{array}{c|cc} x & 1 & 2 \\ \hline P_2 & + & - \end{array}$$

$$x^2 - ax + b$$

$$P = b$$

$$S = a$$

$$\Rightarrow b = 2, a = 1$$

$$a + b = 1 + 2 = 3$$

$$x - 2x = 0 \xrightarrow{\text{ریشه متضاد}} -1 - 2x = 0 \Rightarrow x = -\frac{1}{2}$$

$$\begin{aligned} x = 2 &\rightarrow (k-1)2 + m - 1 = 0 \rightarrow 2k + m - 9 = 0 \rightarrow k = \frac{9-m}{2} \\ x = 0 &\rightarrow m - 1 + 1 = m \rightarrow m > 0 \end{aligned} \quad \begin{cases} k=1 \rightarrow m=5 \textcircled{P} \\ k=2 \rightarrow m=1 \textcircled{X} \\ k=3 \rightarrow m=-1 \end{cases}$$

$$1 > 2 \Rightarrow k=1, m=5$$

$$\frac{3}{2} + k = \frac{5}{2} + 1 = -1/2$$

$$-\frac{1}{4}x^2 + 2x + 5 > \frac{3}{2}$$

$$-x^2 + 4x + 12 > 0$$

$$-x^2 + 4x + 5 > 0$$

$$\begin{array}{c|cc} x & -1 & 5 \\ \hline & - & + \end{array}$$

$$\begin{array}{c} (-1, 5) \\ \downarrow \downarrow \\ a \quad b \end{array}$$

$$b - a = 5 - (-1) = 6$$

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

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

$$\begin{array}{c|cc} x & -1 & 1 & 2 \\ \hline & - & + & - \end{array}$$

از طرف: $x > 0$ \textcircled{P}

$$\Rightarrow \left(\begin{array}{c} 1 \\ a \end{array} \right) \left(\begin{array}{c} 2 \\ b \end{array} \right) \xrightarrow{\text{نقطه میان}} f(x) = 1 - 2(x) + 2 - 2 = -2$$

$$a - 1 < 0 \Rightarrow a < 1 \textcircled{1}$$

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

$$\Delta = a^2 - 6a + 5$$

$$\begin{array}{c|cc} a & 1 & 5 \\ \hline \Delta & + & - \end{array}$$

$$\Delta < 0 \Rightarrow (1, 5) \textcircled{2}$$

$1 \cap 2 = \emptyset \Rightarrow$ مقداری برای a وجود ندارد

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

صورت همواره نامنفی

$$m \neq 0 \quad (1)$$

$$\frac{m-2 > 0 \Rightarrow m > 2}{m \neq 2} \quad (2)$$

$$\Rightarrow m > 2$$

$$\frac{(n^2-n-6)(n-1)^2}{(n^2+n+1)(2-n)^2} \leq 0$$

$$(n-1)^2 > 0$$

n	-2	0	2	3
صورت	+	0	-	+
مخرج	+	+	+	-
عبارت	+	0	-	+

ریشه صورت: 1 و 2 و 3

ریشه مخرج: 2

$$[-2, 2) \cup [2, \infty)$$

$$\frac{2n^2-2n}{n^2+4} < 2$$

$$\frac{2n^2-2n-2n^2-8}{n^2+4} = \frac{-2n-8}{n^2+4} < 0 \Rightarrow$$

$$-2n-8 < 0 \Rightarrow \frac{n}{+} \frac{-2}{-} \frac{4}{+} \quad (-2, 4)$$

$$b-a = 4 - (-2) = 6$$

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

$$\frac{2n^2-4n+n+1}{n+1} = \frac{2n^2-3n+1}{n+1} > 0$$

$$n+1 > 0 \rightarrow n > -1$$

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

n	-1	0	2
صورت	+	0	-
مخرج	-	+	+
عبارت	-	+	-

$$(-\infty, -1) \cup (0, \frac{4}{3}) \quad (2)$$

جواب: $(0, \frac{4}{3})$

$$\frac{n^2-10}{n} \leq 3$$

$$\frac{n^2-10-3n}{n} \leq 0$$

n	-2	0	5
صورت	+	0	-
مخرج	-	-	+
عبارت	-	0	+

$$(-\infty, -2] \cup (0, 5]$$