

$$\frac{1}{+} - \frac{m}{+} \Rightarrow \text{در صورتی که} \rightarrow 9 - 3a + b = 0 \rightarrow -3a + b = -9$$

$$\rightarrow -2a = -1 \Rightarrow a = \frac{1}{2} \text{ و } b = 3 \rightarrow 3 + \frac{1}{2} = \frac{7}{2}$$

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

تفاوت $k-1$ و 3

$$\frac{1}{+} + \frac{3}{+} = -$$

$$x_1 = x_2 = -1 \quad x = \frac{-1}{3}$$

$$(k-2)x + m-1 = 0 \rightarrow \frac{-1}{3} = \frac{1-m}{k-2} \rightarrow \frac{1-m}{k-2} = \frac{1-m}{k-2}$$

$$k-2 < 0 \rightarrow k=1$$

$$\frac{1-m}{1-2} = -1 \rightarrow m=0$$

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

$$-\frac{1}{4}x^2 + 2x + 5 > \frac{5}{4} \rightarrow -\frac{1}{4}x^2 + 2x + \frac{5}{4} > 0 \quad \Delta = b^2 - 4ac$$

$$\Rightarrow x_1 = \frac{-2 + \sqrt{4-1}}{-1} = -1 \quad \text{و} \quad x_2 = \frac{-2 - \sqrt{4-1}}{-1} = 5$$

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

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

$$(x-3)(x-1)(x+1) \rightarrow \frac{1}{+} \text{ و } \frac{3}{+} \rightarrow (x-1) > 0 \text{ و } (x+1) > 0$$

$$(x-3) < 0$$

$$(a, b) = (1, 3) \rightarrow 3^m - 3(1^m) - 2 + 3 = -3$$

$$(a-1)x^m + (a-1)x + 1 < 0 \rightarrow (a-1)(x^m - x) + 1 < 0$$

$$\rightarrow x^m + x < 0 \rightarrow a-1 < 0 \rightarrow a < 1$$

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

$$\Rightarrow D = (-2, +\infty)$$

$$\frac{(x^2-x-5)(x-1)^2}{(x^2+x+1)(x-2)^2} \leq 0 \rightarrow \frac{(x-2)(x+2)(x-1)^2}{(x^2+x+1)(x-2)^2} \leq 0$$

$$\frac{-2}{+} \frac{+}{+} \frac{+}{-} \frac{+}{-} \Rightarrow D = [-2, 2] \cup [1, 2) \cup [7, +\infty)$$

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

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

$$-1 < \frac{2x^2-2x}{x+1} < 0 \rightarrow \begin{cases} -1 < \frac{2x^2-2x}{x+1} < 0 \rightarrow \frac{2x^2-2x+1}{x+1} > 0 \rightarrow \frac{-1}{-} \frac{+}{+} \rightarrow D = (1, +\infty) \\ \frac{2x^2-2x}{x+1} < 0 \rightarrow \frac{2x(x-1)}{x+1} < 0 \rightarrow \frac{-1}{-} \frac{+}{-} \frac{+}{+} \rightarrow D = (-\infty, -1) \cup (0, \frac{1}{2}) \end{cases}$$

$$\text{استخراج در جواب} \rightarrow (0, \frac{1}{2})$$

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

$$\Rightarrow \frac{-2}{-} \frac{+}{+} \frac{+}{-} \Rightarrow D = (-\infty, -2] \cup (0, 2]$$