

$x \mid \begin{array}{ c c c } \hline & - & + \\ \hline \end{array}$ <p style="text-align: center;">$p(x) \mid \begin{array}{ c c c } \hline & + & - \\ \hline \end{array}$</p> <p style="text-align: center;">$x_2 = 3$ و $x_3 = 1$ عبارت صحیح است</p>	$\begin{cases} b - \alpha z^{-1} \\ b + \alpha z^m \end{cases} \rightarrow \begin{cases} \alpha z^m \\ b z^m \end{cases}$ $\alpha + b z^m \quad (z = 1)$	۱
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$(z - k + m - 1)(-1 - m) z^m = 0$ <p style="text-align: center;">$k = 2, m = 1 \Rightarrow n = 2$</p>	$\begin{cases} m = 1 \\ k = 2 \\ n = \frac{1}{m} = 1 \leq \frac{r}{m} \end{cases}$ $\frac{m}{n} \alpha k z \rightarrow \alpha z = 1$	۲
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$\frac{1}{z} x^m + x + 5 > \frac{1}{z}$ $x^2 - 4x - 12 < -V$ $x^2 - 4x - 12 < 0$ $(x - 6)(x + 2)$ $x = -2, 6$	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%;"></td> <td style="width: 10%; text-align: center;">-1</td> <td style="width: 10%;"></td> <td style="width: 10%; text-align: center;">d</td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> </tr> <tr> <td style="text-align: center;">x</td> <td style="text-align: center;"> </td> <td style="text-align: center;">-</td> <td style="text-align: center;"> </td> <td style="text-align: center;">+</td> <td style="text-align: center;">+</td> </tr> <tr> <td style="text-align: center;">$p(x)$</td> <td style="text-align: center;"> </td> <td style="text-align: center;">+</td> <td style="text-align: center;"> </td> <td style="text-align: center;">-</td> <td style="text-align: center;"> </td> </tr> <tr> <td></td> <td style="text-align: center;"> </td> <td style="text-align: center;">+</td> <td style="text-align: center;"> </td> <td style="text-align: center;">-</td> <td style="text-align: center;"> </td> </tr> </table> <p style="text-align: center;">$(a, b) \rightarrow (\frac{-1}{a}, \frac{d}{b})$</p> $b - \alpha = d - (-1) \quad (4)$		-1		d			x		-		+	+	$p(x)$		+		-				+		-		۳
	-1		d																							
x		-		+	+																					
$p(x)$		+		-																						
		+		-																						

$(x-1)^m - 4x + 4 < 0$ $(x-1)^m - 4(x-1) < 0$ $(x-1)((x-1)^m - 4) < 0$ <p style="text-align: center;">$x_1 = 1, x_2 = 5$</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%;"></td> <td style="width: 10%; text-align: center;">-1</td> <td style="width: 10%;"></td> <td style="width: 10%; text-align: center;">+</td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> </tr> <tr> <td style="text-align: center;">$x-1$</td> <td style="text-align: center;"> </td> <td style="text-align: center;">-</td> <td style="text-align: center;"> </td> <td style="text-align: center;">+</td> <td style="text-align: center;">+</td> </tr> <tr> <td style="text-align: center;">$(x-1)^m - 4$</td> <td style="text-align: center;"> </td> <td style="text-align: center;">+</td> <td style="text-align: center;"> </td> <td style="text-align: center;">-</td> <td style="text-align: center;">+</td> </tr> <tr> <td style="text-align: center;">$p(x)$</td> <td style="text-align: center;"> </td> <td style="text-align: center;">-</td> <td style="text-align: center;"> </td> <td style="text-align: center;">+</td> <td style="text-align: center;">+</td> </tr> </table> $f(x) = 1 - m(x) - 2 + m - 1 + 11 \quad (5)$		-1		+			$x-1$		-		+	+	$(x-1)^m - 4$		+		-	+	$p(x)$		-		+	+	۴
	-1		+																							
$x-1$		-		+	+																					
$(x-1)^m - 4$		+		-	+																					
$p(x)$		-		+	+																					

$(a-1)x^m + (a-1)x + 1 < 0$ $\Delta < 0 \rightarrow (a+1)^m - 4a + 4 < 0$ $a^m + 1 - ma - 4a + 4 < 0$ $a^m - 4a + 4 < 0$ $(a-4)(a-1)$ $a = 1, 4$	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%;"></td> <td style="width: 10%; text-align: center;">a</td> <td style="width: 10%;"></td> <td style="width: 10%; text-align: center;">d</td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> </tr> <tr> <td style="text-align: center;">x</td> <td style="text-align: center;"> </td> <td style="text-align: center;">+</td> <td style="text-align: center;"> </td> <td style="text-align: center;">-</td> <td style="text-align: center;">+</td> </tr> <tr> <td style="text-align: center;">$p(x)$</td> <td style="text-align: center;"> </td> <td style="text-align: center;">+</td> <td style="text-align: center;"> </td> <td style="text-align: center;">-</td> <td style="text-align: center;">+</td> </tr> <tr> <td></td> <td style="text-align: center;"> </td> <td style="text-align: center;">+</td> <td style="text-align: center;"> </td> <td style="text-align: center;">-</td> <td style="text-align: center;">+</td> </tr> </table> $\alpha \in (1, 4)$		a		d			x		+		-	+	$p(x)$		+		-	+			+		-	+	۵
	a		d																							
x		+		-	+																					
$p(x)$		+		-	+																					
		+		-	+																					

$m > 0$ *فواصل حرجية*

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

$$m > r$$

	m	0	r
m^r		+	+
m^{r+1}		+	+
$m-r$		-	+
$p(x)$		-	+

$$m \in (r, +\infty)$$

6

$x = -r$ *فواصل حرجية*

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

x	$-r$	1	r	∞
$x^r - x - 1$	+	-	-	+
$(x-1)^r$	+	+	+	+
$x^r + x + 1$	+	+	+	+
$(x-x)^r$	+	+	0	-
$p(x)$	+	-	+	-

$$x \in [-r, 1) \cup [r, +\infty)$$

7

$$\frac{rx^r - rx}{x^r + r} < 0$$

$$\frac{rx^r - rx}{x^r + r} - r < 0$$

$$\frac{rx^r - rx - rx^r - r}{x^r + r} < 0$$

$x^r - rx - 1 < 0$ *فواصل حرجية*

$(x-r)(x+r)$
 $x \in [-r, r]$

x	$-r$	r
$x^r + r$	+	+
$x^r - rx - 1$	+	-
y	+	+

$(-r, r)$
 $a \quad b$
 $b - a = r - (-r) = 2r$ (E)

8

$$-x-1 < rx^r - rx$$

$$rx^r - rx + 1 > 0$$

$\Delta = 9 - 4 = 5$
فواصل حرجية

$$rx^r - rx < 0$$

$$x(rx-r) < 0$$

$x > 0 \quad x < r$

	0	r
x	+	-
$p(x)$	+	+

$$x \in (0, r)$$

9

$$x^r - rx - 1 \leq 0$$

$\Delta = 9 - 4(-1) = 13$

$$x = \frac{r \pm \sqrt{13}}{r} = -r, \Delta$$

x	$-r$	Δ
$p(x)$	+	+

$$x \in [-r, \Delta]$$

10