

۱, ۳ => <sup>درون علامت</sup> <sub>برای ۶</sub>  $(x-3)(x-1) = x^2 - 4x + 3 \rightarrow a=4, b=3$   
 $a+b=7$

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<sup>علامت جدید</sup>  $(k-2)x+m-1)(x-3n)^2$   
 $x=1 \rightarrow -1-3n=0 \rightarrow 3n=-1 \rightarrow n=-\frac{1}{3}$   
 $k-2 < 0 \rightarrow k < 2 \xrightarrow{k \in \mathbb{N}} k=1$   
 $x=3 \rightarrow 3+m-1 \rightarrow m=5$   
 $\rightarrow \frac{m}{n} + k \rightarrow \frac{5}{-\frac{1}{3}} + 1 = -12$

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$\frac{1}{x}x^2 + 2x + 4 > \frac{4}{x} \xrightarrow{x^2} x^2 > -2x^2 + 4x + 12 \rightarrow x^2 > -(x-5)(x+1)$   
 $(a, b) = (-1, 5) \rightarrow 4$

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$x(x^2 - 4x - 1) + 3$   
 $\rightarrow x^2(x-4) - (x-4) \rightarrow (x^2-1)(x-4) < 0$   
 $x < -1 \rightarrow (1, 3) \rightarrow \text{پس } = 2 \rightarrow \frac{1}{12} - \frac{3}{12} - \frac{4}{12} + \frac{3}{12} = -\frac{3}{12}$   
 $x < 1$   
 $x < 3$

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$\Delta < 0 \rightarrow (a-1)^2 - 4(a-1) < 0 \rightarrow a^2 + 1 - 2a - 4a + 4 < 0 \rightarrow a^2 - 6a + 5 < 0$   
 $(a-1)(a-5) < 0$   
 $1 < a < 5$   
 $a-1 < 0$   
 $a < 1$   
 $\rightarrow \emptyset$

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$$\frac{m(m^w + m)}{m - r} \xrightarrow{\text{Criterio}}$$

$$\begin{array}{c} 0 \quad r \\ + \quad | \quad - \quad | \quad + \\ \hline \end{array}$$

$$\rightarrow (-\infty, 0] \cup (r, +\infty)$$

$$m(m(m$$

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$$\frac{(x+r)(x^{2r}-r)(x-1)^r}{(x+x+1)(r-x)^r}$$

$\Delta < 0$

$$\begin{array}{c} -r \quad r \quad r \quad r \\ + \quad | \quad - \quad | \quad - \quad | \quad + \quad | \quad - \\ \hline \end{array}$$

$$[-r, r) \cup [r, +\infty)$$

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$$\frac{rx^r - rx}{x^r + r} < 0 \rightarrow \frac{rx^r - rx - rx^r - 1}{x^r + r} < 0 \rightarrow \frac{x^r - rx - 1}{x^r + r} < 0$$

$$\xrightarrow{\Delta < 0} \frac{(x-r)(x+r)}{x^r + r} < 0 \rightarrow b-a \rightarrow r(-r) = r$$

$$\begin{array}{c} -r \quad r \\ + \quad | \quad - \quad | \quad + \\ \hline \end{array}$$

$(-r, r)$

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$$\frac{-1 < rx^r - rx}{x+1} < 0 \rightarrow \frac{-1 - rx^r + rx}{x+1} < 0 \rightarrow \frac{rx^r - rx + 1}{x+1} < 0$$

$$\frac{rx^r - rx + 1}{x+1} < 0 \rightarrow \frac{rx^r - rx + x + 1}{x+1} < 0 \rightarrow \frac{rx^r - rx + x + 1}{x+1} < 0$$

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

$$\begin{array}{c} -1 \quad 0 \quad r \\ - \quad | \quad + \quad | \quad - \quad | \quad + \\ \hline \end{array}$$

$$\left. \begin{array}{l} \frac{rx^r - rx + 1}{x+1} < 0 \\ \frac{rx^r - rx}{x+1} < 0 \end{array} \right\} \cap \left(0, \frac{r}{r}\right)$$

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$$\frac{x^r - 1}{x} \leq r \rightarrow \frac{x^r - rx - 1}{x} \leq 0 \rightarrow \frac{(x-r)(x+r)}{x} \leq 0$$

$$\begin{array}{c} -r \quad 0 \quad r \quad r \\ - \quad | \quad + \quad | \quad - \quad | \quad + \\ \hline \end{array}$$

$$\Rightarrow (-\infty, -r] \cup (0, r]$$

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