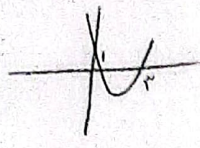


$1 < x < 3 \Rightarrow 1 > 3 \rightarrow 1, 3 \rightarrow 1, 3 \rightarrow y = a(x-a)(x-b) \rightarrow y = (x-1)(x-3) = x^2 - 4x + 3 \Rightarrow \begin{cases} a=1 \\ b=3 \end{cases} \checkmark$



$a+b \rightarrow r+r=V \checkmark$

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$x$	$-1$	$r$
$P$	$+$	$-$

$y = ((k-r)x + m-1)(x-rn)^r$

$\frac{m}{h} + k = \frac{\omega}{r} + 1 = -1 \checkmark$

ساخته شده

$(x-rn)^r \rightarrow (x+1)^r \Rightarrow -rn=1 \Rightarrow n = -\frac{1}{r} \checkmark$

$r+m=9 \Rightarrow m=0 \checkmark$

$(k-r)x + m-1 \xrightarrow{x=r} 0 = rk - r + m - 1 \Rightarrow rk + m = 9$   
 $\xrightarrow{x=0} 0 > 0 \Rightarrow k + m - 1 > 0 \Rightarrow k + r + m < 11 \Rightarrow k + 9 < 11 \Rightarrow k < 2 \Rightarrow k=1$   
 $k \in \mathbb{N} \Rightarrow k=1 \checkmark$

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$y = -\frac{1}{r}x^r + rx + 4$

$\frac{y}{r} < -\frac{1}{r}x^r + rx + 4$

$\Rightarrow 0 < -\frac{1}{r}x^r + rx + 4/r$

$\rightarrow 0 < -(x-rx-4) \rightarrow (-x+\omega)(x+1) > 0$

$\frac{-1}{-r} \cdot \frac{\omega}{r-1} \rightarrow (-1, \omega) = (a, b) \Rightarrow \begin{cases} a=-1 \\ b=0 \end{cases} \xrightarrow{\max} \omega - (-1) = 4 \checkmark$

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$f(x) = x^r - rx^r - x + r = (x-1)(x+1)(x-r)$

$-1$	$1$	$r$
$-r$	$+$	$-$

$x > r$

$P_x = (1, r) \rightarrow \frac{1+r}{r} = 2$

$f(r) = r^r - rx^r - r + r = -r \checkmark$

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$\Delta < 0$

$a^r + 1 - ra - r(a-1) < 0$

$a^r - ra + a < 0 \rightarrow (a-1)(a-\omega) < 0$

$1$	$\omega$
$+$	$-$

$\rightarrow (1, \omega)$

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

$a \in \emptyset \checkmark$

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مميزه 0

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

$$\frac{0}{-\phi - \phi +} \rightarrow P_m = (r, +\infty) \checkmark$$

(7)  
6

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

$$\frac{-r}{+\phi} - \frac{1}{\phi} - \frac{r}{\phi} + \frac{r}{\phi} \rightarrow [-r, r) \cup [r, +\infty) \checkmark$$

(7)  
7

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

$$\frac{-r}{+\phi} - \frac{r}{\phi} \rightarrow (-r, r) \xrightarrow{\max} \left. \begin{matrix} b=r \\ a=-r \end{matrix} \right\} b-a=r \checkmark$$

(7)  
8

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

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

$$\frac{-1}{-\phi} + \frac{0}{\phi} - \frac{r}{\phi} + \frac{r}{\phi} \quad \frac{-1}{-\phi} +$$

$$P_x = (0, \frac{r}{r}) \text{ فقط!}$$

(7)  
9

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

$$\frac{-r}{-\phi} + \frac{0}{\phi} - \frac{\omega}{\phi} \rightarrow P_x = (-\omega, -r] \cup (0, \omega] \checkmark$$

(7)  
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