

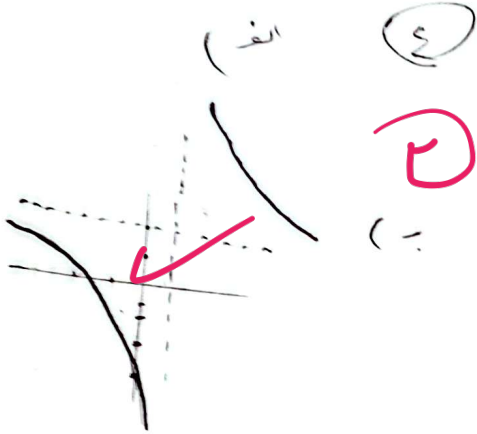
$$f'(x) = \frac{x^c - r(x+1)}{(x-1)^r} \quad (\rightarrow)$$

$$x^c - r(x+1) = 0 \Rightarrow x = 1 \text{ or}$$

$$\begin{array}{c|c} + & + \\ \hline \uparrow & \uparrow \end{array}$$

$$x = 1$$

$$y = r$$



$$r - b = 0 \Rightarrow b = r$$

$$a = r$$

$$f(x) = \frac{r(x+1)}{x-r}$$

$$\left| \frac{r}{r} \right|$$

$$(y-r) = \pm (x-r)$$

with $\frac{1}{1}$

1/1

$\Delta > 0$

$$a^c - 1 > 0 \rightarrow \begin{array}{l} a > 1 \text{ or } \\ a < 1 \text{ or } \end{array}$$

$$\frac{D_{f'}}{D_x} = \frac{-1}{1-a} = \frac{1}{a}$$

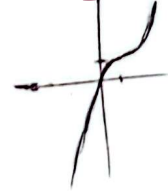
no, $\frac{1}{1}$

1/1

(2) 1

$$f(x) = r x^r - r x + c = 0$$

$$r x^r - r x + 1 = 0$$



(2) 1

$$f'(x) = \frac{-r x^r}{x^r} = -r(-x^r + 1)$$

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

$$+ x^r + 1 x = 0 \Rightarrow x = \begin{array}{l} 0 \text{ or } \\ -1 \end{array}$$

$$f'(x) = \frac{r x^r (x^r - 1) - r x^2}{(x^c - 1)^r}$$

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

$$x^{2r} - r x^r = 0 \Rightarrow x = 0 \text{ or } \pm r$$

$$f'(x) = \frac{-x^r + r x - 1}{(x-1)^r}$$

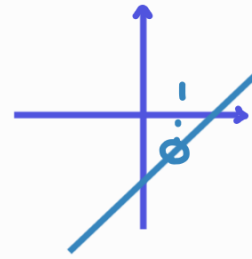
$$+ x^r + r x - 1 = 0 \Rightarrow x = 1$$

$$الف \quad y = \frac{-x^2 + 4x + 1}{x-1} \rightarrow y' = \frac{(-2x+4)(x-1) - (-x^2 + 4x + 1)}{(x-1)^2}$$

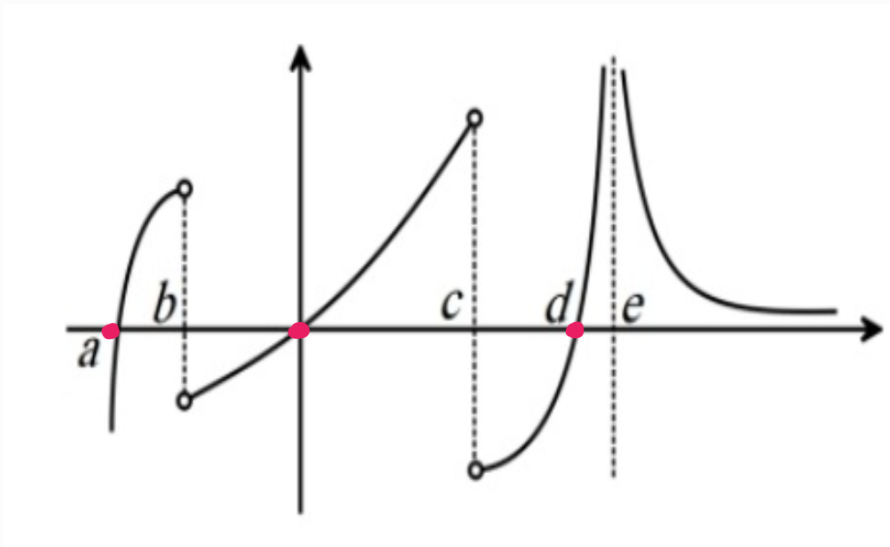
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$$y' = \frac{-x^2 + 2x - 5}{(x-1)^2} \rightarrow \Delta < 0 \rightarrow \text{اکثر صم ندارد!}$$

$$ب \quad y = \frac{(x-1)(x-3)}{x-1} = y = x-3, x \neq 1$$



اکثر صم ندارد!
خفاست!



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 $\left. \begin{matrix} e \\ c \\ b \end{matrix} \right\} f' \text{ وجود ندارد}$

$\left. \begin{matrix} a \\ \cdot \\ d \end{matrix} \right\} \text{صفر} = f'$

سبق مسل $\rightarrow y = (n-1)(n+2) \rightarrow b = -2$
 $\hookrightarrow a = 1$

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$y = (n^2 + n - 2)^2 \rightarrow y' = 2(n^2 + n - 2)(2n + 1) = 0$

$\rightarrow n = -\frac{1}{2}$
 $\rightarrow n = -2$
 $\hookrightarrow n = 1$

x	-2	$-\frac{1}{2}$	1
y'	$-$	$+$	$-$
y	\rightarrow	\uparrow	\rightarrow

max

$y = (n^2 + n - 2)^3 \rightarrow y' = 3(n^2 + n - 2)^2(2n + 1) = 0$

$\rightarrow n = -\frac{1}{2}$
 $\rightarrow n = 1$
 $\hookrightarrow n = -2$

x	-2	$-\frac{1}{2}$	1
y'	$-$	$-$	$+$
y	\rightarrow	\downarrow	\rightarrow

min

$\rightarrow \text{max} - \text{min} = \left(-\frac{1}{2}\right) - \left(-\frac{1}{2}\right) = 0$