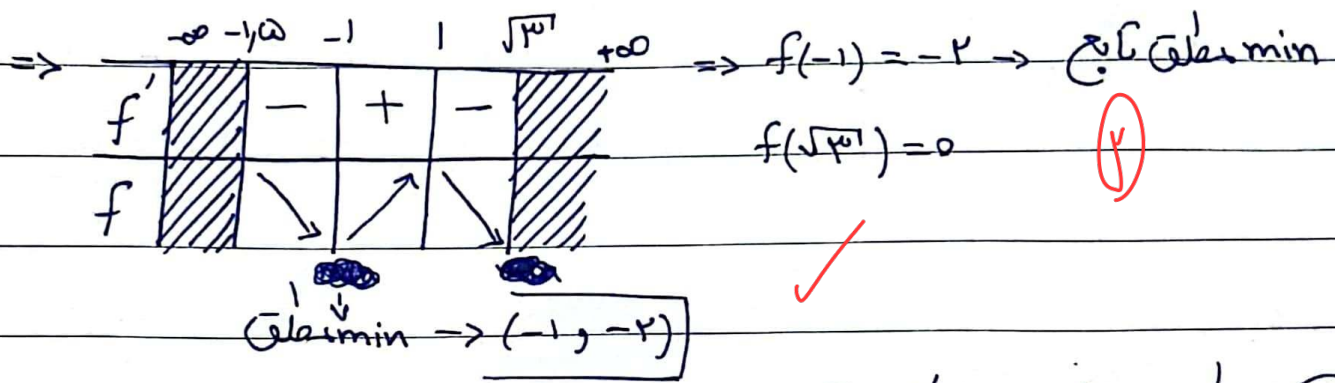


$$y = an^3 + bn^2 + cn + d \rightarrow y' = 3an^2 + 2bn + c \quad (4)$$

$d = 0 \leftarrow (0,0)$ $n=1 \rightarrow 3a+2b+c=0 \leftarrow (1)$ $n=0 \rightarrow c=0$
 $(1,1) \rightarrow a+b+c=1 \xrightarrow{c=0} a+b=1 \quad (2)$

$(1,2) \rightarrow a = -2, b = 3 \Rightarrow ab = -6$ ✓

در بازي داسو سوال د داخل قدر مطلق
 $f(x) = 3x - 2x^2 \Rightarrow f'(x) = -2x^2 + 3 = 0 \quad (5)$
 $x = \pm 1$



در السترم نسو $f'(x) = 0$ (6)

$f(x) = |x|^3 + a|x|^p + b \Rightarrow f'(x) = 3|x|^{p-1} + pa|x|^{p-2}$
 $n = -1 \rightarrow 3 + pa = 0 \Rightarrow a = -\frac{3}{p}$
 $\Rightarrow b = \frac{3}{p} \Rightarrow \frac{b}{a} = -3$ ✓ (7)

$y = \frac{3}{p}x^p + x + \frac{3}{p} \Rightarrow \frac{b}{pa} = -\frac{1}{p} = x \Rightarrow y = \frac{p}{p} \Rightarrow (-\frac{1}{p}, \frac{p}{p}) \quad (8)$

$\frac{a}{a+1} = \frac{p}{p} \Rightarrow pa + p = pa \Rightarrow a = -1$
 $\Rightarrow y = \frac{3x+3}{3x+1} = 0 \Rightarrow x = -\frac{3}{3} = -1$ ✓

$y = \frac{bx^p + v}{fx^p + ax + 1} \rightarrow \frac{b}{f} = 3 \Rightarrow b = 12 \Rightarrow y = \frac{12x^p + v}{fx^p + ax + 1} \quad (9)$

$fx^p + ax + 1 = (3x+1)^p = 3^p x^p + 3^p x + 1 \leftarrow$ سنج
 $\frac{b}{a} = \frac{12}{3} = 4$ ✓ (10)

$$f(x) = \frac{x^k}{2^k - 1} \Rightarrow f'(x) = \frac{k2^k(2^k - 1) - kx^{k-1}(2^k)}{(2^k - 1)^2}$$

(9)

$$\Rightarrow f'(x) = \frac{k2^k - kx^{k-1}}{(2^k - 1)^2} = \frac{2^k - x^{k-1}}{(2^k - 1)^2} = 0$$

$$\Rightarrow x = 0, \sqrt[k-1]{k2^k} \quad x = 2 \leftarrow$$

$$\Rightarrow -\infty \quad 0 \quad \sqrt[k-1]{k2^k} \quad +\infty$$

y'	+	-	-	+
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y	↗	↘	↘	↗
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$$\sqrt[k-1]{k2^k} - 2$$

(2)

min بازه ای نه تابع در آن ابتدا نزولی است

$$f(x) = \frac{x^k - k}{2^k - k} \Rightarrow f'(x) = \frac{k2^k(2^k - k) - kx(2^k - k)}{(2^k - k)^2}$$

(10)

$$\Rightarrow f'(x) = \frac{k2^k - kx}{(2^k - k)^2} = 0$$

(2)

باتوجه به درسیه ما

$$-\infty \quad -2 \quad \sqrt{k-1} \quad \sqrt{k-1} \quad 0 \quad \sqrt{k-1} \quad \sqrt{k-1} \quad 2 \quad +\infty$$

$f'(x)$

f'	hatched	-	-	+	-	+	+	hatched
f	hatched	↘	↘	↗	↘	↗	↗	hatched

در بازه ای ابتدا نزولی است

← (3) (2) (1)