

تکلیف ۲۵

مسئله ۱

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16 Oct. 2024  
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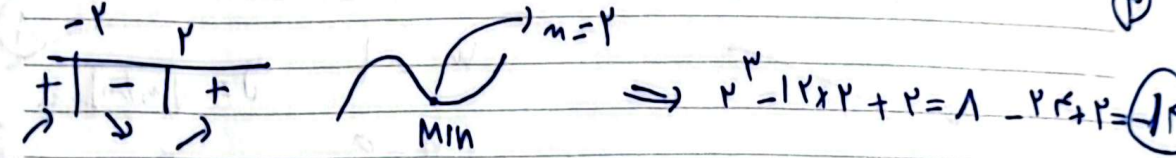
$$\frac{f(x) - f(1)}{x - 1} = \frac{1 - \frac{a}{x} - [1 - a]}{x - 1} = \frac{\frac{a}{x}}{x - 1} = \frac{a}{x^2} \quad (1)$$

$$f'(n) \rightarrow \frac{a}{n^2} \rightarrow \frac{a}{n^2} = \frac{a}{n^2} \Rightarrow n = \sqrt[2]{\frac{a}{f'(n)}} \Rightarrow \sqrt[2]{\frac{a}{\frac{a}{n^2}}} = n$$

$$y' = 2am - a = -1 \Rightarrow f\left(\frac{1}{a}\right) = \frac{1}{a} = \frac{1}{a} - \frac{a}{a} + 1 + a$$

$2am = 2 \Rightarrow m = \frac{1}{a}$

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



$$f(n) = n^2 + an^2 - 2bn - c \rightarrow f'(n) = 2n + 2an - 2b = 0$$

$$f(0) = -c = 0 \Rightarrow c = 0$$

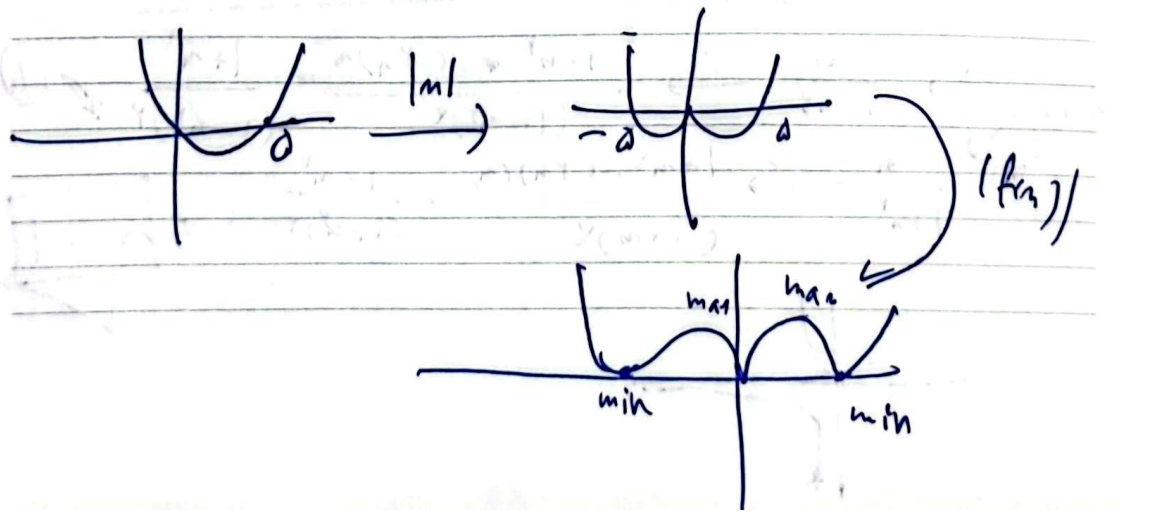
$$f'(0) = -2b = 0 \Rightarrow b = 0$$

$$f'(1) = 2 + 2a - 2b = 0 \Rightarrow 2 + 2a = 0 \Rightarrow a = -1$$

$$f(0) \rightarrow -c$$

$$f(-1) \rightarrow -1 + 1 - c = 0 \Rightarrow c = 0$$

$$f(n) = n^2 - \frac{a}{n} \quad h = \frac{a}{n} \Rightarrow \frac{h}{n} = \frac{1}{n^2}$$

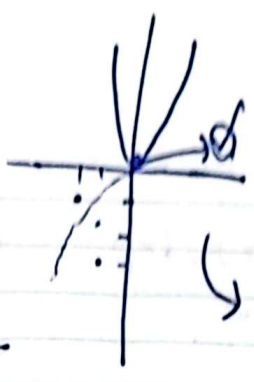


$$y = |x(m^2 + 2)|$$

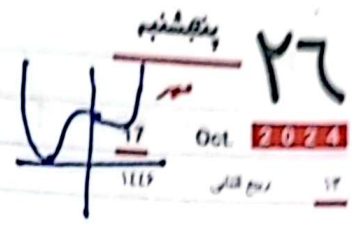
$$m > 0 \rightarrow m^2 + 2m + 0$$

$$m < 0 \rightarrow -m^2 + 2m$$

0	-1	-2
0	-2	-2



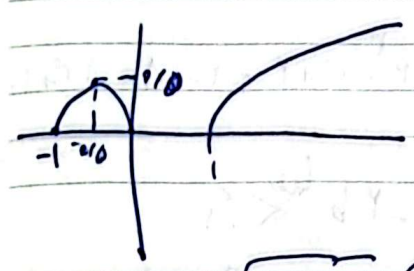
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$$f(m) = \sqrt[3]{2^m} |m-9| \rightarrow \frac{2^{(9-m)}}{\sqrt[3]{2^m}} = 0$$

m	0	9
y	0	0

$$\rightarrow \sqrt[3]{\frac{2^9}{2^0}} \left(\frac{9}{0}\right) = 10$$

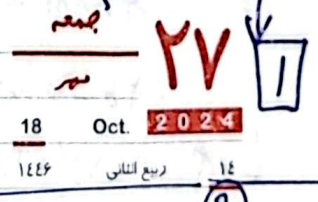


$$m=1 \quad y = \sqrt{m|m-n|}$$

$$h=0 \quad k=2$$

$$m > 0 \rightarrow \sqrt{m^2 - m}$$

$$m < 0 \rightarrow \sqrt{-m^2 - m}$$



$$y' = \frac{m(m-1) - 2}{(m^2 + m + 1)^2}$$

$$\rightarrow m^2 - m - 2 < 0$$

$$m < 1 \rightarrow m > -2$$

$$f(m) \xrightarrow{m > 0} \frac{m}{1-m^2} \rightarrow \frac{1-m^2 - (2m)m}{(1-m^2)^2} = \frac{1-m^2}{(1-m^2)^2}$$

$$f(m) \xrightarrow{m < 0} \frac{m}{1+m^2} \rightarrow \frac{1+m^2 - (2m)m}{(1+m^2)^2} = \frac{1-m^2}{(1+m^2)^2}$$

