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* مولف و مترجم درس ریاضی کانون

* طراح ریاضی کام آفرین ریاضی کشور

2
 a, b, c جملات متوالی باشند

$$b = \frac{a+c}{2} \quad \text{میان}$$

$$\frac{3}{4}, \frac{5}{2}, \frac{17}{14}$$

$$\left. \begin{aligned} a_1 &= \frac{3}{4} \\ d &= \frac{5}{2} - \frac{3}{4} = \frac{7}{4} \end{aligned} \right\} \begin{aligned} a_9 &= a_1 + 8d = \frac{3}{4} + \frac{56}{4} = \frac{59}{4} = \underline{\underline{14.75}} \\ a_n &= a_1 + (n-1)d \end{aligned}$$

رابطه عمومی
 در نقاط مشخص

$$\frac{-1.5 + 3}{2} = \frac{3}{4} = -\frac{6}{2a}$$

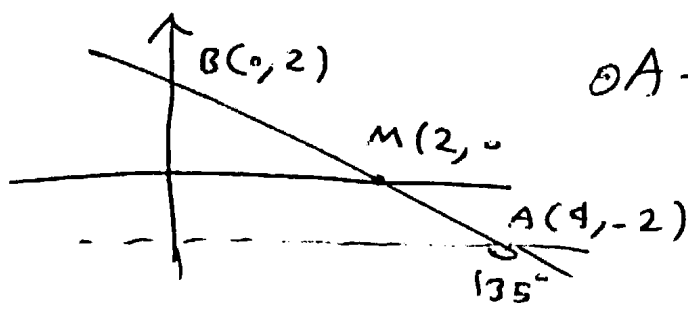
$$S = \alpha + \beta = -\frac{6}{a} = \frac{3}{2}$$

$$|\alpha - \beta| = \frac{\sqrt{\Delta}}{|a|} = \frac{\sqrt{4k^2 - 20}}{1} = \frac{4}{3}k \rightarrow$$

$$4k^2 - 20 = \frac{16}{9}k^2$$

$$\rightarrow \frac{5}{9}k^2 = 5 \Rightarrow k^2 = 9 \rightarrow \frac{k^2}{2} = 4.5$$

$$\Rightarrow \left\lceil \frac{k^2}{2} \right\rceil = \underline{\underline{4}}$$



$$OA = \sqrt{16 + 4} = 2\sqrt{5} \quad (5)$$

$$y = -x + 2 \Rightarrow M(0, 2) \rightarrow A(4, -2)$$

$$f(\sqrt{5}) = (\sqrt{5})^2 - [\sqrt{5}] = 5 - 2 = 3$$

$$f(3a) = 2 \Rightarrow 9a^2 - [3a] = 2 \quad (6)$$

با (دستگیر کنید) پس بریم، $a = -\frac{1}{3}$

$$n \geq a \Rightarrow a \geq 0$$

$$\sqrt{n-a} = a - \sqrt{n} \xrightarrow{(2)} \cancel{n-a} = \cancel{n} - 2a\sqrt{n} + a^2$$

$$\sqrt{n} = \frac{a^2 + a}{2a} = \frac{a+1}{2} \Rightarrow n \left(\frac{a+1}{2} \right)^2 \xrightarrow{\text{فرد } a}$$

$$a=1 \rightarrow n=1$$

$$a=3 \rightarrow n=9$$

$$a=5 \rightarrow n=25$$

$$a=7 \rightarrow n=49$$

$$a=9 \rightarrow n=81$$

5 عدد صحیح ✓

(7)

$$y = \frac{n-10}{10} \xrightarrow{y=1} n=20$$

(8)

$$f(n) = \frac{n-10}{10} \xrightarrow[n=20]{y=1} f(20)=1 \Rightarrow f(1)=20$$

$$1+6+9+1=20$$

$$9=12$$

$$(n^2+2n+4)(n-2)=8 \Rightarrow n^3-8=8$$

(9)

$$n^3=16 \Rightarrow n=\sqrt[3]{16}$$

$$\log_n \sqrt{2} = \log_{\sqrt[3]{16}} \sqrt{2} = 4$$

$$f(1)=2 \rightarrow c + \log_5 b = 2$$

$$f(2,4)=0 \rightarrow c + \log_5 (2,4a+b) = 0$$

(10)

$$b = 9 \cdot a + 25b \leftarrow \frac{b}{2,4a+b} = \frac{25}{1} \leftarrow \log_{\frac{b}{2,4a+b}} 5 = 2$$

$$-24b = 7 \cdot 9$$

$$-2b = 59 \Rightarrow \frac{a}{b} = -\frac{2}{5} \checkmark$$

(12)

$$\sin n - \cos n = \sqrt{2} \sin(n - \pi/4)$$

$$\frac{\sqrt{2} \sin n - \sqrt{2} \cos n}{\sqrt{2} (\sqrt{2} \sin(n - \pi/4))}$$

$$3 \cos 60^\circ + 2 \sin(-30^\circ)$$

$$3 \times \frac{1}{2} - 2 \times \frac{1}{2} = \frac{1}{2} \checkmark$$

$$\frac{\sin^4 x + 4(1 - \sin^2 x)}{1 + (1 - \sin^2 x)} - \frac{\cos^4 x + 4(1 - \cos^2 x)}{1 + (1 - \cos^2 x)} \quad (13)$$

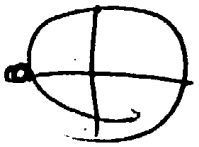
$$= \frac{\sin^4 x - 4 \sin^2 x + 4}{2 - \sin^2 x} - \frac{\cos^4 x - 4 \cos^2 x + 4}{2 - \cos^2 x}$$

$$= (2 - \sin^2 x) - (2 - \cos^2 x) = \cos^2 x - \sin^2 x$$

$$= \cos 2x \checkmark$$

(14)

$$\cos 2x + \frac{1 - \cos 2x}{2} = 0$$

$$\frac{\cos 2x + 1}{2} = 0 \Rightarrow \cos 2x = -1$$


$$2x = 2k\pi + \pi \Rightarrow x = k\pi + \frac{\pi}{2}$$

$$-\frac{5\pi}{2}, -\frac{3\pi}{2}, -\frac{\pi}{2}, \frac{\pi}{2} = -\frac{\pi}{2}$$

$$\lim_{x \rightarrow 2^+} \frac{x-2}{x^2-4} \xrightarrow{\text{HOP}} \frac{1}{2x} = \frac{1}{4}$$

(15)

$$\lim_{x \rightarrow 2^-} \frac{x-2}{x^2-3} = \frac{0}{1} = 0 \quad \text{or } \frac{1}{4} = \frac{1}{4}$$

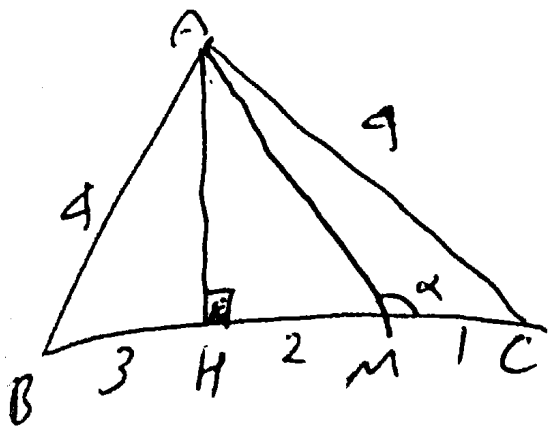
$$f-g = \frac{4}{(x-1)(x+3)} = \frac{1}{x-1}$$

(16)

$$= \frac{1-x}{(x-1)(x+3)} = \frac{-1}{x+3}$$

مجاوب قائم $x = -3$
 نه افقی $y = 0$

✓ $(-3, 0)$



$$AH = \sqrt{7}$$

$$\tan \alpha = -\frac{AH}{MH} = -\frac{\sqrt{7}}{2}$$

(11)

$$\lim_{n \rightarrow 0} ([n] + [-n]) = -1$$

$$n \rightarrow 0$$

$$n = n \in \mathbb{Z}$$

$$\lim_{n \rightarrow n^+} = (1-a)xn + (3a^2-1)(-n-1) = (-3a^2-a+2)n + (1-3a^2)$$

$$\lim_{n \rightarrow n^-} : (1-a)x(n-1) + (3a^2-1)(-n) = (-3a^2-a+2)n + (a-1)$$

$$a = 1 = 1 - 3a^2 \Rightarrow 3a^2 + a - 2 = 0$$

$$\hookrightarrow a = -1, \frac{2}{3}$$

$$a = -1 \quad \text{or} \quad -2 \leq \vec{u} \cdot \vec{E}$$

$$a = \frac{2}{3} \rightarrow -b = -\frac{1}{3} \Rightarrow b = \frac{1}{3}$$

$$a/b = \frac{2/3}{1/3} = 2 \checkmark$$

(18)

$$(f/g)'(1) \times g^2(1) = 0$$

$$f/g = 8 \rightarrow (f/g)'(1) = 0$$

$$y' = \frac{m^2 - m - 2}{(n-1+m)^2} \rightarrow y' \leq 0 \quad m^2 - m - 2 \leq 0 \quad (19)$$

$$-1 \leq m \leq 2$$

بعضی: $n = 1 - m \Rightarrow 1 - m \leq 1 \Rightarrow m \geq 0$

$$\Rightarrow 0 \leq m \leq 2$$

$$m \neq 2 \Rightarrow 0 \leq m < 2$$

در مجموع $0 \leq m < 2$ $m = 0, 1$

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insta: math_kamili

خط (20) $y = \frac{1}{n}$ نقطه $n=9$ $y = bn + c$ ماسه

$$n=9 \Rightarrow y = \frac{1}{9}$$

$$y' = -\frac{1}{n^2} \Rightarrow m = -\frac{1}{9}$$

خط: $y - \frac{1}{9} = -\frac{1}{9}(n-9)$

$$y = -\frac{1}{9}n + \frac{2}{9} = bn + c$$

$$c = \frac{2}{9} \Rightarrow 9c = 2$$

نقطه ~~خط~~ $A(-1, 4)$

(21)

$$y'' = 6n + 2a = 0 \Rightarrow -4 + 2a = 0$$

$$a = 3$$

$$y(-1) = -4 \Rightarrow -1 + a - b = -4$$

$$b = 5$$

$$\frac{9}{6} = \frac{3}{2} = \frac{1}{6}$$

math_hamidi

موفق باشید