

18, 5

مسئله یازدهم گروه A

نام خانوادگی: غزل عباسی تکلیف شماره 17

$$q = \frac{\Delta y}{\Delta n} = \frac{-1}{1} = \frac{k-m}{-1-1} \Rightarrow k-m=2 \quad S=(AB)^2 \Rightarrow$$

$$AB = \sqrt{(k-m)^2 + (-1-1)^2} = \sqrt{2^2 + 4^2} \quad S = (AB)^2 = 4 + 16 = 20$$

$$n_A + n_C = n_B + n_D \Rightarrow -1 + n = 2 + (-1) - n \Rightarrow 2n = 2 \quad n = \frac{2}{1}$$

$$y_A + y_C = y_B + y_D \Rightarrow 1 + y = 1 + y + 2 \Rightarrow \times$$

$$AB = B - A = (2, -1) \quad CD = D - C = (-2, 2n) \quad \vec{CD} \perp \vec{AB} \Rightarrow$$

هم راستا
یا جهت معکوس

$$AB, BC \Rightarrow \text{عمود} \quad AB \times BC = 0 \Rightarrow y + 1 = 0 \Rightarrow y = -1$$

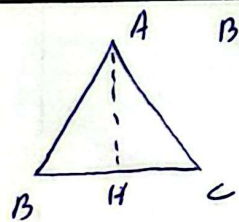
$$AB \text{ طول} = \sqrt{4 + 1} = \sqrt{5} \quad BC \text{ طول} = \sqrt{(-2)^2 + (-1/5)^2} = 2, 5$$

$$\rho = 2 \times (\sqrt{5} + 5/2) = 15$$

$$m = \sqrt{2} < \tan 45^\circ \quad \frac{-2m}{m^2 - 1} = \sqrt{2} \Rightarrow \sqrt{2}m^2 + 2m - \sqrt{2} = 0$$

$$n_1, n_2 \Rightarrow \frac{-b \pm \sqrt{\Delta}}{2a} \Rightarrow \Delta = 4 + 12 = 16 \Rightarrow \frac{-2 \pm 4}{2\sqrt{2}} \Rightarrow n_1 = \frac{-2 + 4}{2\sqrt{2}} = \frac{1}{\sqrt{2}}$$

$$n_2 = \frac{-2 - 4}{2\sqrt{2}} = -\frac{3}{\sqrt{2}}$$

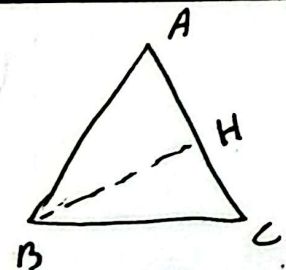


$$BC \text{ معلوم} \Rightarrow M_{BC} = \frac{11-2}{5-2} = \frac{9}{3} = 3 \quad B(2, 2) \quad y-2 = 2(x-2)$$

$$y = 2x - 2$$

$$y - 2x + 2 = 0$$

$$d = \frac{|ax + by + c|}{\sqrt{a^2 + b^2}} = \frac{|-2 + 9 + 2|}{\sqrt{2^2 + 1^2}} = \frac{9}{\sqrt{5}} = \frac{18}{\sqrt{5}}$$



B معلوم

$$y + 2x - 2 = 0 \Rightarrow y = 2 - 2x$$

BC, AB

$$x^2 + 2x - 1 = 0$$

$$B(2, 1)$$

$$y = 1$$

$$d = \frac{|2 - 9 - 1|}{\sqrt{1 + 4}} = \frac{8}{\sqrt{5}} = \frac{16}{\sqrt{5}}$$

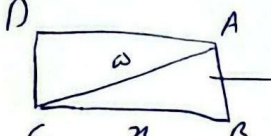
فاصله خط: $m = \frac{4}{-2} = -2 \xrightarrow{(0, -4)} y + 4 = -2(n) \Rightarrow y = -2n - 4$ (9)
 فاصله از مبدأ $\Rightarrow \frac{|-4|}{\sqrt{1^2 + 4^2}} = \frac{4}{\sqrt{17}} = \frac{4\sqrt{17}}{17}$
 معادله خط: $-2n - 4 = 0 \Rightarrow |n| = \frac{4}{2} = 2$ (7)

دو خط موازی $\Rightarrow y - an - 1 = 0 \Rightarrow m_1 = m_2 \Rightarrow a = \frac{1}{a} \Rightarrow a = \pm 1$ (✓)
 $ay - n - a + 1 = 0$

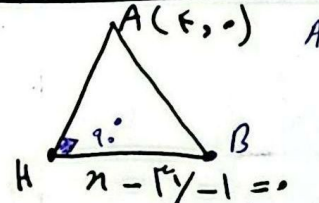
اگر $a = 1 \Rightarrow y - n - 1 = 0 \xrightarrow{(1, 2)}$ در آن صورت می‌باشد $y - n = 0 \xrightarrow{(1, 2)}$ در آن صورت نمی‌باشد

فاصله خط از خط $\Rightarrow (1, 2), y - n = 0 \Rightarrow \frac{|1 - 2|}{\sqrt{1^2 + 1^2}} = \frac{1}{\sqrt{2}}$ (5)
 عرض مستطیل

اگر $a = -1 \Rightarrow y + n - 1 = 0 \xrightarrow{(1, 2)} x$ $y - n = 0 \xrightarrow{(1, 2)} x$ غیر قابل تبدیل


 $\omega^2 = \left(\frac{1}{\sqrt{2}}\right)^2 + n^2 \Rightarrow 10 - \frac{1}{2} = n^2 \Rightarrow n = \frac{\sqrt{19}}{\sqrt{2}}$

$S = \frac{1}{\sqrt{2}} \times \frac{\sqrt{19}}{\sqrt{2}} = \frac{\sqrt{19}}{2}$


 $AH = \frac{|4 - 1|}{\sqrt{1^2 + 1^2}} = \frac{3}{\sqrt{2}}$

$S = (BH)(AH) \times \frac{1}{2} \Rightarrow n_B y_B > 0$
 بیشترین حالت می‌باشد $n = 0$ ، y ترتیب به منفرجه (اد) $\Rightarrow$ مثلث قائم الزامیست
 طبق داده ها $H\left(\frac{4\sqrt{2}}{1}, \frac{9}{1}\right)$ (2)
 $AB = \frac{9}{\sqrt{10}} \Rightarrow S_{max} = \frac{9}{\sqrt{10}} \times \frac{9}{\sqrt{10}} \times \frac{1}{2} = \frac{81}{20}$

$M = \sqrt{2} = \frac{a - b}{\frac{-1}{2} - (-\frac{1}{2})} \Rightarrow a - b = \frac{\sqrt{2}}{9}$
 $AB = \sqrt{\left(\frac{\sqrt{2}}{9}\right)^2 + \frac{1}{4a}} = \frac{1}{3} = \frac{2}{9}$ (9)
 $S = \frac{2}{9} \times \frac{2}{9} = \frac{4}{81} \Rightarrow \frac{4}{18} = n^2 \Rightarrow n = \frac{2}{3\sqrt{2}} = \frac{\sqrt{2}}{3}$

$p(-2, -4) \Rightarrow mop = \frac{2}{3}$
 $mL = \frac{-2}{3} \xrightarrow{\text{فاصله}} y = \frac{-2}{3}n - \frac{20}{3}$
 $L_r \text{ موازی} = y = \frac{2}{3}n + c$
 $t = \sqrt{3^2 + 4^2} = 5$ (فاصله 1)
 $L_r \Rightarrow \frac{|c|}{\sqrt{1 + (\frac{2}{3})^2}} = \frac{20}{5} \Rightarrow |c| = \frac{20}{3}$

$y = \frac{-2}{3}n - \frac{20}{3} \Rightarrow n = \sqrt{y+1}$
 $y = \frac{2}{3}n + \frac{20}{3}$
 $\times 12 \Rightarrow 12y = -8n - 80$
 $12y = 8n + 80$
 $\Rightarrow -16n = 160 \Rightarrow n = -10$
 $y = +1$
 $(-10) \times (+1) = -10$ (3)