

ساراسانی تکلیف شماره ۱۷ - یازدهم رخترا A

$$A(-2, k) \Rightarrow y - k = -\frac{1}{2}(x + 2) \Rightarrow y = -\frac{1}{2}x + k - 1 \quad \left. \begin{array}{l} k - 1 = m + 2 \\ k - m = 3 \end{array} \right\}$$

$$B(3, m) \Rightarrow y - m = -\frac{1}{2}(x - 3) \Rightarrow y = -\frac{1}{2}x + m + \frac{3}{2}$$

$$AB = \sqrt{(-2-3)^2 + (\underbrace{k-m}_3)^2} = \sqrt{25+9} = \sqrt{34} = \sqrt{2} \cdot \sqrt{17} \quad S = (\sqrt{34})^2 = 34$$

$$a_A + a_C = a_B + a_D \Rightarrow -1 + a = 3 - m \Rightarrow 2m = 4 \Rightarrow m = 2$$

$$ABCD \Rightarrow BC \perp AB \quad m_{AB} = \frac{k-1}{-1-2} = -\frac{2}{3} \rightarrow m_{BC} = \frac{3}{2} = \frac{y-1}{x-3} \Rightarrow$$

$$y = -1 \quad A(-1, 4), B(3, 1), C\left(\frac{3}{2}, -1\right), D\left(-\frac{3}{2}, 2\right)$$

$$P = 2(AB + BC) = 2\left(5 + \frac{5}{2}\right) = 15$$

$$\tan \phi_0' = m = \sqrt{2} \quad \tan \alpha + (\tan^2 \alpha - 1)y = 2 \Rightarrow (\tan^2 \alpha - 1)y = 2 - \tan \alpha$$

$$\frac{-\tan \alpha}{\tan^2 \alpha - 1} = \sqrt{2} \Rightarrow -\tan \alpha = \sqrt{2} \tan^2 \alpha - \sqrt{2} \Rightarrow y = \frac{-\tan \alpha}{\tan^2 \alpha - 1} x + \frac{\sqrt{2}}{\tan^2 \alpha - 1}$$

$$\Rightarrow \sqrt{2} \tan^2 \alpha + \tan \alpha - \sqrt{2} = 0 \quad \alpha - \beta = \frac{\pi}{4}$$

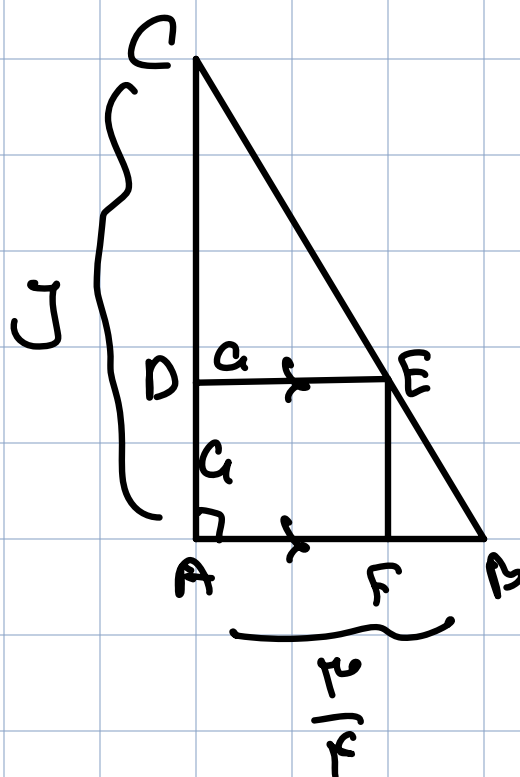
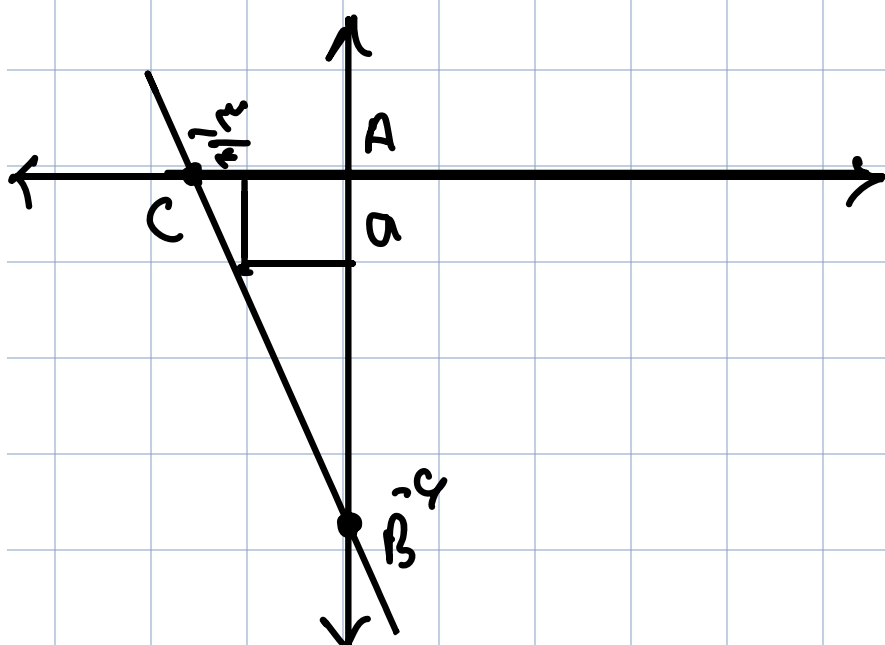
$$m_{BC} = \frac{11-2}{3-2} = \frac{9}{1} = 9$$

$$y - 2 = 9(x - 3) \Rightarrow y = 9x - 25$$

$$BC: 2x - y - 3 = 0 \quad d: \frac{|ax_0 + by_0 + c|}{\sqrt{a^2 + b^2}} = \frac{|2 \cdot 9 - 1 - 3|}{\sqrt{2^2 + 1}} = \frac{10}{\sqrt{5}} = 2\sqrt{5}$$

$$\left. \begin{array}{l} AB: y + 2x = 5 \\ BC: 2y - 3x = -19 \end{array} \right\} \Rightarrow x = -\frac{-19 - 12}{-5 - 4} = -3 \Rightarrow y = -1$$

$$BH = \frac{|2y - 3x - 19|}{\sqrt{2^2 + 1}} = \frac{|-6 + 9 - 19|}{\sqrt{5}} = 10$$



$$\text{مربع } ADEF \Rightarrow AB \parallel DE \xrightarrow{\text{ثلاثية متشابهة}} \frac{CD}{AC} = \frac{DE}{AB} \Rightarrow$$

$$\frac{4-a}{4} = \frac{a}{\frac{3}{5}} = \frac{5a}{3} \Rightarrow 11 - 5a = 20a \Rightarrow a = \frac{11}{25}$$

$$\text{قطر مربع} = a\sqrt{2} = \frac{11\sqrt{2}}{25}$$

$$\left. \begin{aligned} ay - b &= a - 1 \\ y - ax &= 1 \end{aligned} \right\} \Rightarrow y = \frac{b}{a} + \frac{a-1}{a} \xrightarrow{\text{موازى}} \frac{1}{a} = a \Rightarrow a^2 = 1 \Rightarrow a = \pm 1$$

$$\xrightarrow{a=1} y = b \text{ و } y = b+1 \quad \xrightarrow{a=-1} y = -b+1 \text{ و } y = -b+1$$

نقطه (1, 2) در این خط صدق نمی کند نقطه (1, 2) در هیچ یک از این دو خط صدق نمی کند

$$y = \frac{|C - C'|}{\sqrt{a^2 + b^2}} = \frac{1}{\sqrt{2}} = \frac{\sqrt{2}}{2} \quad d = \sqrt{a^2 + y^2} \Rightarrow \left(\frac{\sqrt{2}}{2}\right)^2 + b^2 = 2d$$

$$\Rightarrow b^2 = \frac{4d}{2} \Rightarrow b = \frac{\sqrt{2}}{\sqrt{2}} \times \frac{\sqrt{2}}{\sqrt{2}} = \frac{\sqrt{2}}{2} \quad s = \frac{\sqrt{2}}{\sqrt{2}} \times \frac{\sqrt{2}}{\sqrt{2}} = \frac{\sqrt{2}}{2} = \frac{\sqrt{2}}{2} d$$

$$x - 3y = 1 \Rightarrow 3y = x - 1 \Rightarrow y = \frac{1}{3}x - \frac{1}{3}$$

$$d = \frac{|x - 1|}{\sqrt{1+9}} = \frac{\sqrt{10}}{10} \quad m_{AC} = -3 \rightarrow y = -3(x - 4) = -3x + 12$$

$$\text{نقطه} \rightarrow \frac{1}{3}x - \frac{1}{3} = -3x + 12 \rightarrow \frac{10}{3}x = \frac{37}{3} \rightarrow x = 3.7, y = 0.9$$

$$\left[\begin{array}{ccc|c} 3.7 & 4 & 1 & 0 \\ 0.9 & 0 & 0 & 0 \\ 1 & 1 & 1 & 0 \end{array} \right] = 0.9 \quad -3y = -3.7 \quad s = \frac{1}{3} \times 3.7 = 1.23$$

$$m = \frac{b-a}{\frac{1}{r} - (-\frac{1}{r})} = \frac{b-a}{\frac{1}{r}} = \sqrt{r} \rightarrow b-a = \frac{\sqrt{r}}{r}$$

-9

$$a = \sqrt{\underbrace{\left(-\frac{1}{r} - (-\frac{1}{r})\right)^2}_{\frac{1}{r^2}} + \underbrace{(b-a)^2}_{\frac{r}{4}}} \rightarrow \text{نخرج} = a\sqrt{r} = \frac{\sqrt{r}}{r}$$

$$\text{المسافة من المركز إلى المماس} = r \rightarrow \sqrt{r^2 + r^2} = d$$

-10

$$m_{OA} = \frac{r}{r} \xrightarrow{OA \perp L} m_L = -\frac{r}{r} \quad \left. \begin{array}{l} OA \perp L \\ L' \perp L \end{array} \right\} OA \parallel L' \Rightarrow m_{L'} = \frac{r}{r}$$

$$OA \rightarrow y = \frac{r}{r}x \quad L' \rightarrow y = \frac{r}{r}x + C$$

$$OL' = r = d \Rightarrow \frac{C}{\sqrt{1 + \left(\frac{r}{r}\right)^2}} = \frac{rC}{d} = d \rightarrow C = \frac{r}{r}d$$

$$L' \rightarrow y = \frac{r}{r}x + \frac{r}{r}d, \quad L \rightarrow y + r = -\frac{r}{r}(x + r) \Rightarrow y = -\frac{r}{r}x - \frac{r}{r}d$$

$$\Rightarrow \left(\frac{r}{r}x_B + \frac{r}{r}d\right) = -\frac{r}{r}x_B - \frac{r}{r}d \Rightarrow$$

∴

$$17n_B + 100 = -9n_B - v_d \Rightarrow 26n_B = -100 \Rightarrow n_B = -\frac{100}{26}$$

$$y_B = -\frac{v_A}{\mu} + \frac{v_d}{\mu} = -1 \quad n_B \times y_B = \underline{V_S}$$