

17-A

مسئله 17

$$A = \begin{vmatrix} -2 & k \\ k & m \end{vmatrix} \text{ و } B = \begin{vmatrix} 4 & m \\ m & 3 \end{vmatrix} \quad m_{AB} = -\frac{1}{2} = \frac{m-k}{4+m} \Rightarrow \frac{1}{2} = \frac{k-m}{4+m} \Rightarrow k-3=3 \quad .1$$

$$a = d_{AB} = \sqrt{(-2-4)^2 + (k+m)^2} = \sqrt{45} \Rightarrow S = a^2 = (\sqrt{45})^2 = 45$$

$$m_A + n_C = m_B + n_D \Rightarrow x-1 = -x+2 \Rightarrow x = \frac{3}{2} \quad .2$$

$$m_{AB} \times m_{AD} = -1 \Rightarrow -\frac{3}{4} \times \frac{1-y}{\frac{3}{2}} = -1 \Rightarrow y^2 = 1$$

$$d_{AB} = \sqrt{16+9} = 5 \quad d_{CB} = \sqrt{\frac{16}{4} + \frac{9}{4}} = \frac{5}{2}$$

$$\Rightarrow P = 5 + 4 = 9$$

$$\tan 60^\circ = \sqrt{3} \Rightarrow y = -\frac{2m}{m^2-1} \sqrt{3} \Rightarrow (m - \frac{\sqrt{3}}{3})(\sqrt{3}m + 3)$$

$$\Rightarrow m = \frac{\sqrt{3}}{3} \text{ و } m = -\sqrt{3}$$

$$\Rightarrow \left| \frac{3\sqrt{3}-\sqrt{3}}{3} \right| = \frac{2\sqrt{3}}{3}$$

$$y_{BC} = 2x-3 \quad d_{AH} = \frac{10}{\sqrt{5}} \times \frac{\sqrt{5}}{\sqrt{5}} = \frac{10\sqrt{5}}{5} = 2\sqrt{5} \quad .4$$

$$7x-19 = 14-4x \Rightarrow x = 3 \Rightarrow y = 1 \quad .5$$

$$d = \frac{22}{5}$$

$$y_1 = 8x-6 \text{ و } y_2 = x = y \quad -8x-6 = x \Rightarrow x = -\frac{2}{3} \text{ و } y = -\frac{2}{3} \quad .6$$

$$\sin 45^\circ = \sqrt{\frac{8}{9}} = \frac{\sqrt{8}}{3}$$

$$y = ax + \frac{a-1}{a} \text{ و } y = ax+1 \Rightarrow a = \frac{1}{a} \Rightarrow a = \pm 1 \quad .7$$

$$a = 1 \Rightarrow x+1 = y$$

$$d = \frac{1}{\sqrt{2}} = \frac{\sqrt{2}}{2}$$

$$d' = \frac{\sqrt{2}}{2}$$

$$S = d \times d' = \frac{\sqrt{2}}{2} \times \frac{\sqrt{2}}{2} = \frac{1}{2}$$

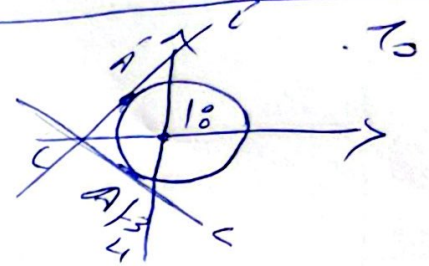
$$AB=3 \Rightarrow BH=\sqrt{9-\frac{9}{10}}=\frac{9}{\sqrt{10}} \quad S=\frac{1}{2} \times \frac{3}{\sqrt{10}} \times \frac{9}{\sqrt{10}}=\frac{27}{20} \quad .8$$

$$AH=\frac{3}{\sqrt{10}}$$

$$m_D = \frac{a-b}{-4/6} = \sqrt{3} \Rightarrow b-a = \frac{\sqrt{3}}{6} \quad .9$$

$$d = \sqrt{\frac{1}{36} + \frac{3}{36}} = \frac{1}{3} \Rightarrow \sqrt{2} = \frac{1}{3} \times \sqrt{2} = \frac{\sqrt{2}}{3}$$

$$v=5 - \frac{1}{m_L} = MAO = \frac{0+4}{0+3} = \frac{4}{3} \Rightarrow y_L = -\frac{3}{4}x - \frac{25}{4}$$



$$y_L = \frac{4}{3}x + \frac{25}{3}$$

$$12y + 9x = -75 \Rightarrow 12y - 16x = 100 \Rightarrow 25x = -175 \Rightarrow x_C = -7, y_C = -7$$

$$y_C \times x_C = 7$$