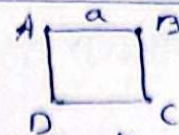


$$m_{AB} = \frac{m-k}{k+1} = -\frac{1}{1} = -1 \Rightarrow \frac{m-k}{1} = -1 \Rightarrow m-k = -1 \Rightarrow m = k-1$$

$$a = \sqrt{(k+1)^2 + (m-k)^2} = \sqrt{k^2 + 9} = \sqrt{k^2 + 9} \Rightarrow S_{\text{مربع}} = (\sqrt{k^2 + 9})^2 = k^2 + 9$$



$$A(-4, 6) \quad B(1, 1) \quad m_{AB} = \frac{1-6}{1+4} = -1 \Rightarrow AB \parallel DC \quad \frac{y-y_1}{x-x_1} = \frac{y_2-y_1}{x_2-x_1} \Rightarrow \frac{y-1}{x-1} = \frac{y_2-1}{x_2-1} \Rightarrow y_2 = x_2 + 1$$

$$AB \perp BC \Rightarrow m_{BC} = \frac{y-1}{x-1} = \frac{1-6}{1+4} = -1 \Rightarrow y_2 = -x_2 + 1$$

$$b = \sqrt{(1+4)^2 + (1-6)^2} = 5$$

$$a = \sqrt{(1-(-4))^2 + (1-6)^2} = 5$$

$$P_{ABCD} = 2(5+5) = 20$$

$$\tan 45^\circ = 1 \Rightarrow m = 1 \Rightarrow \frac{y-1}{x-1} = 1 \Rightarrow y = x + 1$$

$$\Rightarrow \sqrt{3}m^2 + 2m - \sqrt{3} = 0 \Rightarrow m^2 + 2m - 1 = 0 \Rightarrow (m-1)(m+3) = 0 \Rightarrow m = 1 \text{ or } m = -3$$

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

$$A(1, 9) \quad B(2, 3) \quad C(4, 11) \quad m_{BC} = \frac{11-3}{4-2} = 4 \Rightarrow y-3 = 4(x-2) \Rightarrow y = 4x - 5$$

$$AH = \frac{|4-2+9|}{\sqrt{1+16}} = \frac{11}{\sqrt{17}} = \frac{11\sqrt{17}}{17}$$

$$B = \frac{V}{F} n = \frac{19}{F} \Rightarrow V - 2n = \frac{19}{F} \Rightarrow Vn - 19 = 19 - 2n \Rightarrow 11n = 38 \Rightarrow n = 3$$

$$B(3, 1), AC = 4y - 3x - 14 = 0$$

$$BH = \frac{|12-9-14|}{\sqrt{16+9}} = \frac{11}{5} = 2.2$$

$$\frac{9-n}{9} = \frac{n}{\frac{19}{F}} \Rightarrow \frac{9-n}{9} = \frac{19n}{F} \Rightarrow 9-n = 19n \Rightarrow 9 = 20n \Rightarrow n = \frac{9}{20}$$

$$n = \frac{9}{20} \Rightarrow n = \frac{9}{20} \Rightarrow \frac{9}{20} \Rightarrow \frac{9}{20}$$

$$a = \frac{|1-0|}{\sqrt{1+1}} = \frac{1}{\sqrt{2}} \Rightarrow \frac{\sqrt{2}}{2} \Rightarrow b = \sqrt{\frac{1}{2} + b^2} \Rightarrow b^2 = \frac{1}{2} \Rightarrow b = \frac{\sqrt{2}}{2}$$

$$S_{\text{مربع}} = \sqrt{2} \times \frac{\sqrt{2}}{2} = 1$$

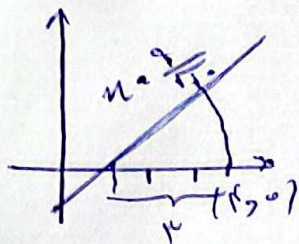
$$a = \frac{|1-0|}{\sqrt{1+1}} = \frac{1}{\sqrt{2}} \Rightarrow \frac{\sqrt{2}}{2} \Rightarrow b = \sqrt{\frac{1}{2} + b^2} \Rightarrow b^2 = \frac{1}{2} \Rightarrow b = \frac{\sqrt{2}}{2}$$

$$S_{\text{مربع}} = \sqrt{2} \times \frac{\sqrt{2}}{2} = 1$$

$$n = 1.2 \Rightarrow y = \frac{1}{1.2} = \frac{5}{6} \Rightarrow AH = \frac{|x+0-1|}{\sqrt{1+9}} = \frac{1}{\sqrt{10}} = \frac{1}{\sqrt{10}}$$

$$n = \sqrt{9 - \frac{9}{10}} = \sqrt{\frac{11}{10}} = \frac{1}{\sqrt{10}}$$

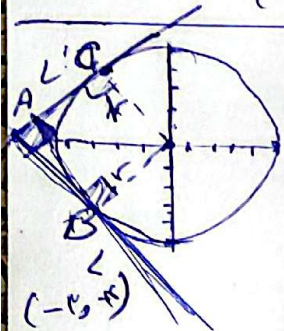
$$S = \frac{1}{r} \propto \frac{1}{\sqrt{10}} \propto \frac{9}{\sqrt{10}} = \frac{1}{\sqrt{10}} = 1.1 \mu\text{m}$$



$$\left(-\frac{1}{r}, b\right) \Rightarrow \left(-\frac{1}{r}, a\right) \Rightarrow m_D = \frac{a-b}{-\frac{1}{r} + \frac{1}{r}} = \sqrt{r} \Rightarrow \frac{a-b}{-\frac{1}{r}} = \sqrt{r} \Rightarrow a-b = -\frac{\sqrt{r}}{r}$$

$$d = \sqrt{\left(-\frac{1}{r} + \frac{1}{r}\right)^2 + (a-b)^2} = \sqrt{\left(-\frac{1}{r}\right)^2 + \left(-\frac{\sqrt{r}}{r}\right)^2} = \sqrt{\frac{1}{r^2} + \frac{r}{r^2}} = \frac{1}{r}$$

$$r = \frac{1}{d} = \frac{1}{\frac{1}{r}} = r$$



$$r = \sqrt{(0+1)^2 + (0-1)^2} = \sqrt{2}$$

$$B(-1,0) \Rightarrow m_{BO} = \frac{0-0}{-1-0} = \frac{0}{-1} = 0 \Rightarrow m_{BA} = \frac{1}{r}$$

$$m_{BA} = \frac{-1-y_A}{-1-x_A} = \frac{1}{r} \Rightarrow y_A = -1, x_A = -1$$

$$A(-1,-1) \Rightarrow n_A \propto y_A = -1$$