

$$A(-2, k) \rightarrow \text{خط} \rightarrow m = -\frac{1}{p} \rightarrow m = \frac{\Delta y}{\Delta x} = \frac{k-m}{-2-f} = \frac{k-m}{-4} = -\frac{1}{4} \rightarrow k-m=3$$

$$B(f, m) \rightarrow \text{فاصله} = |AB| = \sqrt{(k-m)^2 + (-2-f)^2} = \sqrt{3^2 + (-4)^2} = \sqrt{9+16} = \sqrt{25} = 5 \rightarrow \text{پس فاصله} = 5$$

$$S = a^2 = (\sqrt{25})^2 = 25$$

$$\begin{cases} A(-1, 4) \\ B(2, 1) \\ C(x, y) \\ D(-1-m, y+3) \end{cases} \rightarrow \text{مربع} \rightarrow \overline{CD} = \sqrt{(x+1+m)^2 + (y+3-y)^2} = \sqrt{(x+1+m)^2 + 9}$$

$$\overline{AB} = \sqrt{(-1-2)^2 + (4-1)^2} = \sqrt{14+9} = 5$$

$$\overline{AD} = \sqrt{(m_y - m_x)^2 + (y_r - y_l)^2} = \sqrt{y^2 + 16} = 5 \rightarrow y = -1$$

$$2mx + (m^2 - 1)y = 3 \rightarrow \text{شیب} = m = \frac{-a}{b} \rightarrow \begin{cases} \frac{-2m}{m^2 - 1} = \sqrt{3} \\ \sqrt{3}m^2 - \sqrt{3} + 2m = 0 \end{cases}$$

$$\Delta = |- \sqrt{3} - \frac{\sqrt{3}}{3}| = |-\frac{4\sqrt{3}}{3}| = \frac{4\sqrt{3}}{3}$$

$$A(1, 9) \rightarrow AH: y = -\frac{1}{p}x + 9, 5$$

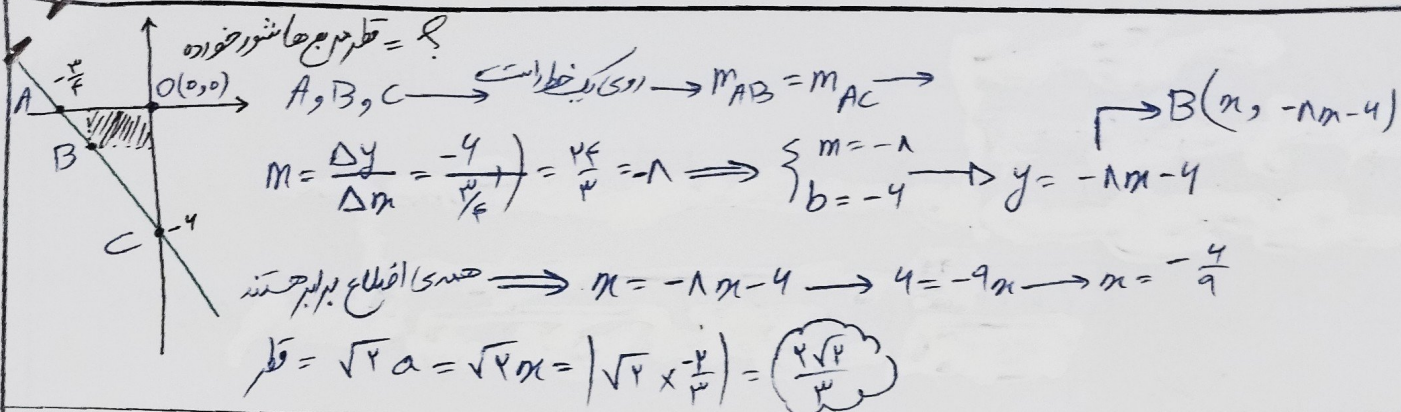
$$B(3, 3) \rightarrow m = \frac{\Delta y}{\Delta x} = \frac{11-3}{v-3} = \frac{8}{f} = 2 \rightarrow y = 2x + (-3)$$

$$C(v, 11) \rightarrow \text{فاصله} = |AH| = \sqrt{(5-1)^2 + (9-3)^2} = \sqrt{16+36} = \sqrt{52} = 2\sqrt{13}$$

$$\begin{cases} AB: y+2x=7 \\ AC: fy-3x=14 \\ BC: ry-vx=-19 \end{cases}$$

$$BH = ? \rightarrow \begin{cases} AC: fy-3x=14 \\ BH: fx+ry=15 \end{cases} \Rightarrow B(3, 1) \rightarrow H(\frac{34}{100}, \frac{452}{100})$$

$$BH = \sqrt{(3-\frac{34}{100})^2 + (1-\frac{452}{100})^2} = \sqrt{(\frac{266}{100})^2 + (-\frac{352}{100})^2} = \sqrt{14,34} \approx 3,78$$



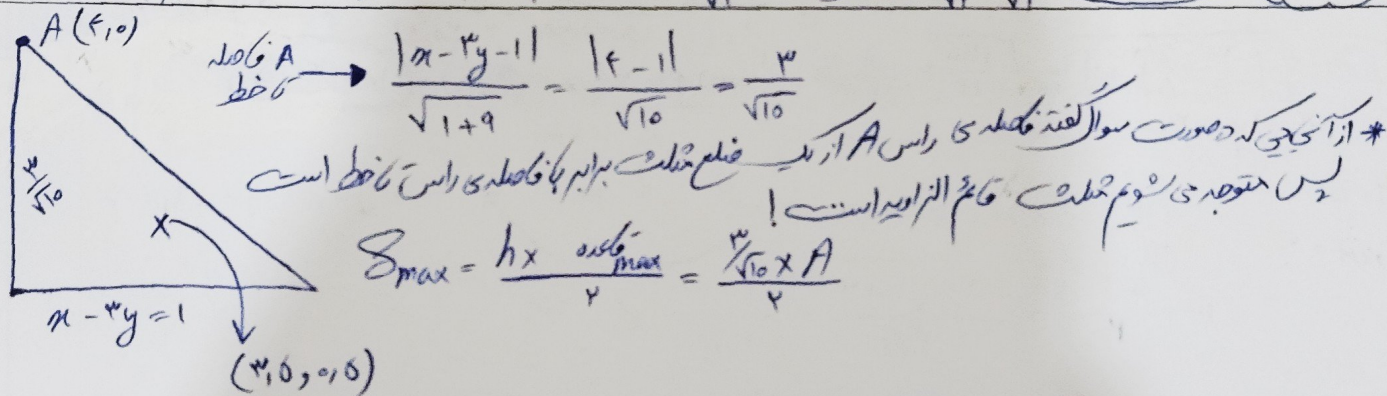
$y - ax = 1$
 $ay - x = a - 1$

$\rightarrow$ ضلع مقابل $\rightarrow$ موازی هستند $\rightarrow m_1 = m_2 \rightarrow \begin{cases} m_1 = a \\ m_2 = \frac{1}{a} \end{cases} \rightarrow a = \frac{1}{a} \rightarrow a^2 = 1 \rightarrow a = \pm 1$

قطر = 5 (1, 2) $\rightarrow$ دو حالت $\begin{cases} a = +1 \rightarrow \begin{cases} y - x = 1 \\ y - x = 0 \end{cases} \rightarrow$ نقطه (1, 2) $\rightarrow$ ✓ و ✓
 $a = -1 \rightarrow \begin{cases} y + x = 1 \\ -y - x = -2 \end{cases} \rightarrow$ نقطه (1, 2) $\rightarrow$ غرض چون نقطه در آن متوجه نمی‌گردد

$S_{\text{مربع}} = ?$

$\rightarrow$ فاصله دو نقطه $\begin{cases} y - x = 1 \\ y - x = 0 \end{cases} \rightarrow$ فاصله $= \frac{|c - c'|}{\sqrt{a^2 + b^2}} = \frac{1}{\sqrt{2}} = \frac{\sqrt{2}}{2} \Rightarrow$
 $\Rightarrow x^2 + \left(\frac{\sqrt{2}}{2}\right)^2 = 25 \rightarrow x^2 = 25 - \frac{1}{2} = \frac{49}{2} \rightarrow x = \frac{7}{\sqrt{2}} \Rightarrow S = ab = \frac{1}{\sqrt{2}} \times \frac{7}{\sqrt{2}} = \frac{7}{2}$



$(-\frac{1}{4}, a)$
 $(-\frac{1}{4}, b)$

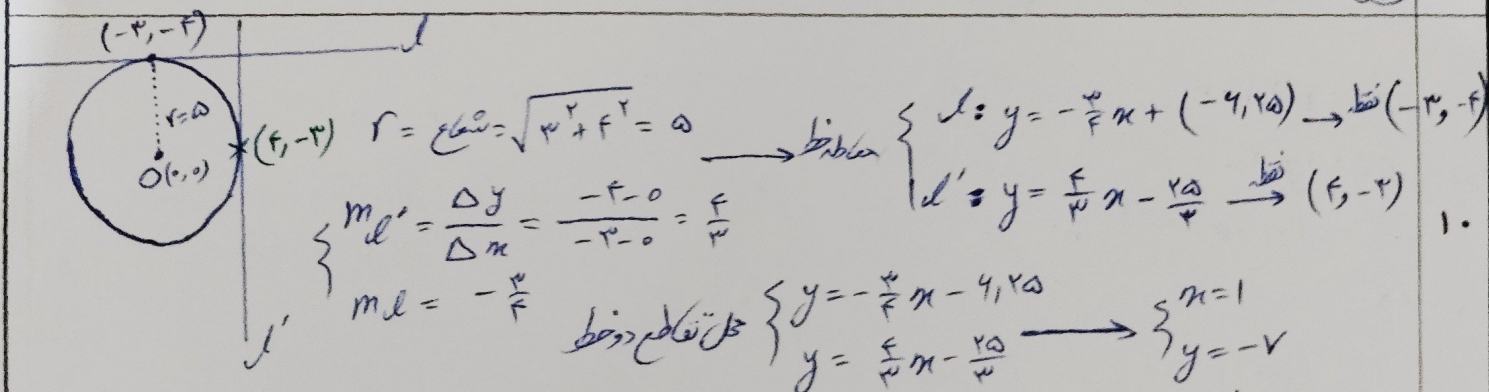
$\rightarrow$ در راس های مربع $\rightarrow$ خط Δ

نقطه $\rightarrow m_{\Delta} = \frac{\Delta y}{\Delta x} = \frac{b - a}{-\frac{1}{4} - (-\frac{1}{4})} = \frac{b - a}{\frac{1}{4}} = 4(b - a) = \sqrt{3} \rightarrow b - a = \frac{\sqrt{3}}{4}$

$m_{\Delta} = \sqrt{3}$

قطر مربع = ؟ فاصله ی دو نقطه = اندازه ی ضلع $= \sqrt{(b - a)^2 + (-\frac{1}{4} - (-\frac{1}{4}))^2} = \sqrt{\left(\frac{\sqrt{3}}{4}\right)^2 + \left(\frac{1}{4}\right)^2} = \sqrt{\frac{3}{16} + \frac{1}{16}} = \sqrt{\frac{4}{16}} = \sqrt{\frac{1}{4}} = \frac{1}{2}$

$S_{\text{مربع}} = (\text{ضلع})^2 = \left(\frac{1}{2}\right)^2 \Rightarrow$ قطر $= \sqrt{(\text{قطر})^2} = \sqrt{2(\text{ضلع})^2} \rightarrow \sqrt{2 \times \left(\frac{1}{2}\right)^2} = \sqrt{2 \times \frac{1}{4}} = \sqrt{\frac{2}{4}} = \sqrt{\frac{1}{2}} = \left(\frac{\sqrt{2}}{2}\right)$



نقطه محل تقاطع $\rightarrow (1, -7)$