

۱۹, ۲۵

کیان جعفری

$$\textcircled{1} \begin{cases} \frac{r+k}{r} = r \\ \frac{1-k}{r} = 1 \end{cases} \quad ? \quad \frac{1+k}{r-k} = \frac{1+k}{-r} = -v \Rightarrow m = \frac{1}{v}$$

(۲)

$$\frac{1}{v}m + b = y \Rightarrow \frac{r}{v} + b = 1 \Rightarrow b = \frac{r}{v} \Rightarrow \frac{1}{v}r + \frac{r}{v} = y \checkmark$$

$$\textcircled{2} Bc = \sqrt{(k-1)^2 + (v-1)^2} = \sqrt{2} = (5) \checkmark$$

(۱, ۵)

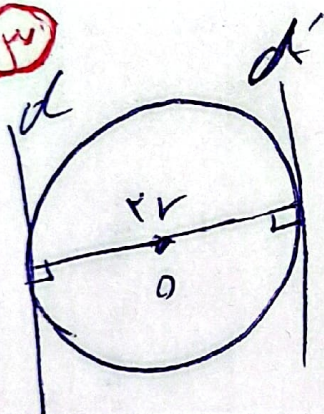
دقتاً

$$S_{\Delta} = \left(\frac{1}{v} \right) \left| \begin{array}{ccc|c} -1 & -k & r & \\ r & v & 1 & \\ 1 & 1 & 1 & \end{array} \right| = \frac{1}{v} = \frac{\Delta \times Ah}{r} \Rightarrow Ah = \frac{r}{v}$$

$\Delta - r = 3$

~~$\Delta - r = 1$~~

(۳)



$$\begin{cases} ry - ax - r = 0 \\ ry - x - v = 0 \end{cases} \Rightarrow \begin{cases} ry - rx - r = 0 \\ ry - rx - 1k = 0 \end{cases}$$

(۱, ۵)

$$\Rightarrow \frac{|-1k - (-r)|}{\sqrt{r^2}} = r \Rightarrow \frac{r}{\sqrt{r^2}} = r \Rightarrow \frac{r}{r} = r \Rightarrow \frac{r}{r} = r \Rightarrow \frac{r}{r} = r$$

$\frac{1}{\sqrt{r^2}} = \frac{r}{\sqrt{r^2}} \Rightarrow r = \frac{r}{\sqrt{r^2}} \Rightarrow S = \frac{9\pi}{\Delta}$

(۴)

$$\begin{cases} \frac{r+k}{r} = r \\ \frac{1+k}{r} = r \end{cases}$$

$$\frac{r-1}{r-k} = \frac{r}{-r} = -1$$

$$\Rightarrow \begin{cases} -x + d = y \\ x + r = y \end{cases}$$

(۲)

$$\sqrt{(r/2 - r)^2 + (r - 1/2)^2} = \sqrt{(r/2)^2 + (r/2)^2} = \frac{\sqrt{2}}{2} \checkmark$$

$$\begin{aligned} -x + d &= x - r \\ \Rightarrow rx &= v \Rightarrow \begin{cases} x = r/2 \\ y = 1/2 \end{cases} \end{aligned}$$

$$\textcircled{5} \frac{rm - r}{\Delta - m} = \frac{rm - r}{m + 1} \Rightarrow rm^2 + rm + rm - r = -rm^2 + rm + \Delta m - r$$

$$\Rightarrow \Delta m^2 - 1rm + 1r = 0 \Rightarrow \frac{1}{\Delta} \textcircled{-1}$$

جمع مقاری

(۱, ۵)

$$\begin{cases} y = rx - 1 \\ x + y = r \end{cases} \Rightarrow x + rx - 1 = r \Rightarrow x = \frac{r+1}{r+1} = 1 \Rightarrow y = r-1$$

$$\begin{cases} y = rx - 1 \\ x + y = r \end{cases} \Rightarrow x + rx - 1 = r \Rightarrow rx = r+1 \Rightarrow x = \frac{r+1}{r} \Rightarrow y = \frac{r}{r} = 1$$

$$\textcircled{v} \quad ax + by + c = 0, \quad \frac{-a}{b} = \frac{-1}{r} \Rightarrow ra = b$$

$$\Rightarrow ax + \frac{ra}{r} + c = 0 \Rightarrow ax + a + c = 0$$

$$\frac{x}{a} + \frac{y}{b} = 1$$

$$\textcircled{v} \quad \frac{x}{a} + \frac{y}{b} = 1 \Rightarrow bx + ay = ab, \quad \frac{-b}{a} = \frac{-1}{r} \Rightarrow \boxed{rb = a}$$

$$\Rightarrow bx + rby = ab \Rightarrow x + ry = a = 0 \Rightarrow \frac{|a|}{\sqrt{a^2}} = \sqrt{r^2}$$

$$\Rightarrow |a| = b \quad a = +10 \text{ or } -10 \Rightarrow b = \cancel{10} \text{ or } -10 \quad \Delta = -10$$

$$\Rightarrow \sqrt{10^2 + 10^2} = \sqrt{100 + 100} = \sqrt{200} = \sqrt{100 \cdot 2} = 10\sqrt{2}$$

$$\textcircled{1} \quad \begin{cases} y = \frac{r}{m}x + r \\ y = (1-m)x + r \end{cases} \Rightarrow \textcircled{2} \text{ intersection} \Rightarrow \frac{\Delta}{r} = \frac{r \times \square}{r} \Rightarrow \square = \frac{\Delta}{r}$$

$$\Rightarrow 0 = \frac{r}{m}x + r \Rightarrow -r = \frac{r}{m}x \Rightarrow \frac{-r \times m}{r} = \frac{-m}{1} = \textcircled{\frac{-m}{1}}$$

$$0 = (1-m)x + r \Rightarrow \frac{-r}{1-m} = x \Rightarrow \textcircled{x = \frac{r}{m-1}}$$

$$\left| \frac{r}{m-1} + \frac{r}{r} \right| = \frac{\Delta}{r} \Rightarrow \left| \frac{r + m^2 - m}{rm - r} \right| = \frac{\Delta}{r}$$

$$\Rightarrow \frac{r + m^2 - m}{rm - r} = \frac{\Delta}{r} \Rightarrow 1 + m^2 - m = 10m - 10$$

$$m^2 - 11m + 11 = 0 \Rightarrow m^2 - 12m + 12 = 0 \Rightarrow (m-6)^2 = 24 \Rightarrow m = 6 \pm \sqrt{24}$$

$$\frac{r + m^2 - m}{rm - r} = \frac{-10}{r} \Rightarrow 1 + m^2 - m = -10m + 10$$

$$\Rightarrow m^2 + 11m - 9 = 0 = P = \textcircled{-1} \Rightarrow -1 \times r = \textcircled{-r} \checkmark$$

$$m = \frac{r_0}{r \times r} \Rightarrow m = \frac{10}{r} \Rightarrow Am = \sqrt{\left(\frac{10}{r} - 1\right)^2 + \left(1 - \frac{r}{r}\right)^2} = \frac{\sqrt{50}}{r}$$

$$\frac{\Delta y}{\Delta x} = \frac{-10}{r} = -1 \Rightarrow \begin{cases} -x + r = y \\ x = y \end{cases} \Rightarrow -x + r = x \Rightarrow x = \frac{r}{2} \Rightarrow y = \frac{r}{2}$$

$$Am = \sqrt{(r-1)^2 + (r-1)^2} = \sqrt{2} \Rightarrow \frac{Am}{Ah} = \frac{\frac{\sqrt{50}}{r}}{\frac{\sqrt{2}}{r}} = \frac{\sqrt{50}}{\sqrt{2}} = \frac{\sqrt{25 \cdot 2}}{\sqrt{2}} = \frac{5\sqrt{2}}{\sqrt{2}} = 5 \checkmark$$

ادامی سوال

$$\textcircled{4} \quad n' = n - 1 \Rightarrow n' + 1 = n \Rightarrow y' - 1 = 1n' + 1 - 1 \quad \underline{0}$$

$$y' = y + 1 \Rightarrow y' - 1 = y \Rightarrow y' = \cancel{1n' + 1} + 1$$

جواب صحیح بعد ...

$$\textcircled{10} \quad \begin{cases} y = -n + 1 \\ y = n + 1 \end{cases} \Rightarrow -n + 1 = n + 1 \Rightarrow 1n = -1 \Rightarrow n = -1$$

$$y = 1$$

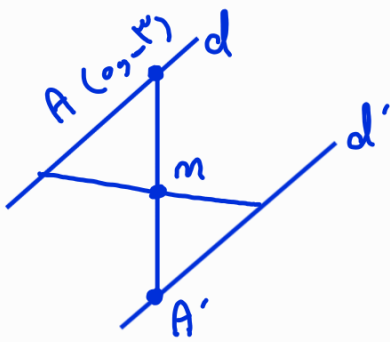
$$\frac{n' + 1}{1} = -1 \Rightarrow n' + 1 = -1 \Rightarrow n' = -2$$

$$\frac{y' + 1}{1} = 1 \Rightarrow y' + 1 = 1 \Rightarrow y' = 0$$

$$\Rightarrow 1 + 1 = \textcircled{2}$$



②



نقطه $A(0, -3)$ روی خط $y = 2x - 3$

قرار دارد، m میانه میانی دو نقطه A و A' :

$$\frac{\alpha + 0}{2} = 2 \rightarrow \alpha = 4$$

$$\rightarrow A' \begin{vmatrix} 4 \\ -1 \end{vmatrix}$$

$$\frac{\beta - 3}{2} = -2 \rightarrow \beta = -1$$

حالا دو خط d و d' با هم موازی و شیب برابر دارند :

$$d' : y - (-1) = 2(x - 4) \rightarrow y = 2x - 9$$