

$$a = \frac{\Delta y}{\Delta x} = \frac{14}{-2} = -7$$

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معادله خط $a = -7$

نقطه از روی خط $(\frac{r+1}{2}, -\frac{r+1}{2}) = (3, 1)$

$y = -7x + b \Rightarrow 1 = -21 + b \Rightarrow b = 22$

$y = -7x + 22$

A(3, 1)
B(-5, 7)
C(-1, 3)

$|BC| = \sqrt{(\Delta y)^2 + (\Delta x)^2} = \sqrt{(4-3)^2 + (-6-1)^2} = \sqrt{1+49} = \sqrt{50}$

معادله خط BC $y = -\frac{1}{7}x + \frac{15}{7}$

فاصله نقطه از خط $= \frac{|\frac{1}{7} \times 3 + 1 - \frac{15}{7}|}{\sqrt{\frac{1}{49} + \frac{1}{49}}} = \frac{|\frac{3}{7} + \frac{7}{7} - \frac{15}{7}|}{\sqrt{\frac{2}{49}}} = \frac{|\frac{-5}{7}|}{\frac{\sqrt{2}}{7}} = \frac{5}{\sqrt{2}} = \frac{5\sqrt{2}}{2}$

$\omega = 2, 1 \Rightarrow 2, 2$

$ky - x = 1 \Rightarrow ky - 2x = 1$
 $ky = 2x + 1 \Rightarrow a = 2$

$S_0 = 2r^2 \Rightarrow R \times (\frac{2\sqrt{5}}{\omega})^2 \Rightarrow 9\pi$

if $\pi = 3 \Rightarrow \frac{2\sqrt{5}}{\omega}$

if $R = 3 \Rightarrow \omega = 4\sqrt{5}$

$\frac{|e - c'|}{\sqrt{a^2 + b^2}} \Rightarrow \frac{|14 - 2|}{\sqrt{2}} = \frac{12}{\sqrt{2}} = 6\sqrt{2}$

$\frac{4\sqrt{5}}{1} = \frac{4\sqrt{5}}{1} = \frac{4\sqrt{5}}{1} \Rightarrow 4\sqrt{5}$

A|3|
B|4|
C|-1|

CH: $y = x - 1$
MH: $\frac{|14 - 14 + 1|}{\sqrt{1^2 + 1^2}} = \frac{1}{\sqrt{2}}$
 $a = \frac{r - c}{r - 1} = \frac{3 - 1}{3 - 1} = 1$
 $r = r + b \Rightarrow b = 0$
 $y + x - 1 = 0$

فاصله نقطه از خط $= \frac{|-1 - 1 - 1|}{\sqrt{2}} = \frac{3}{\sqrt{2}} = \frac{3\sqrt{2}}{2}$

$(\frac{1}{\sqrt{2}})^2 + x^2 = 1 \Rightarrow \frac{1}{2} + x^2 = 1 \Rightarrow x^2 = \frac{1}{2} \Rightarrow x = \pm \frac{1}{\sqrt{2}}$

فاصله دو نقطه $= \sqrt{\Delta x^2 + \Delta y^2} = \sqrt{(4-1)^2 + (1-3)^2} = \sqrt{9+4} = \sqrt{13}$

$\frac{-m+1}{-2m-4} = \frac{m+1}{2m-4} \Rightarrow \frac{m+1}{2} \times \frac{2m-4}{2m-4} = -1 \Rightarrow \frac{(m+1)(2m-4)}{(2m-4)(2m-4)} = -1$
 $\Rightarrow (m+1)(2m-4) = -(2m-4)(2m-4)$

$= (m+1)(2m-4) = 2m^2 + 2m - 4m - 4 = 2m^2 - 2m - 4$
 $2m^2 + 2m^2 + m - 4m - 2 + 4 = 0 \Rightarrow 4m^2 - 3m + 2 = 0$

$\Delta = (-3)^2 - 4(4)(2) = 9 - 32 = -23 < 0 \Rightarrow$ معادله برای m و r ندارد

$$\begin{cases} AB: x+y=1 \\ AC: y=2x-1 \\ BC: x+y=2 \end{cases} \Rightarrow \begin{cases} y = -x+1 \rightarrow B(0,1) \\ y = 2x-1 \rightarrow A(1,1) \\ y = 2-x \rightarrow C(\frac{2}{3}, \frac{4}{3}) \end{cases}$$

$$M(\frac{\frac{0}{3}+\frac{1}{3}}{1}, \frac{\frac{1}{3}+\frac{4}{3}}{1}) = M(\frac{1}{3}, \frac{5}{3}) \Rightarrow AM = \sqrt{(\frac{1}{3}-1)^2 + (\frac{5}{3}-1)^2} = \frac{\sqrt{5}}{3} = AM$$

$$AM \perp BC \Rightarrow a = -1 \Rightarrow y+x=1 \quad \text{Abstand BC} = \frac{|1+1-1|}{\sqrt{2}} = \frac{1}{\sqrt{2}} = AH \quad \frac{\sqrt{5}}{3} \cdot \frac{1}{\sqrt{2}} = \frac{\sqrt{10}}{6} = \frac{1}{2} \cdot \frac{\sqrt{10}}{3} = \frac{\sqrt{10}}{6}$$

$$\frac{x}{a} + \frac{y}{b} = 1 \Rightarrow \frac{-b}{a} = -\frac{1}{r} \quad d = \frac{|ab|}{\sqrt{a^2+b^2}} \Rightarrow d = \sqrt{2} \quad b = \frac{a}{r}$$

$$\frac{b}{a} = -\frac{1}{r} \quad b = \frac{a}{r} \Rightarrow b+x = a \Rightarrow ab = a + \frac{a}{r} = \frac{a(r+1)}{r}$$

$$\sqrt{a^2 + \frac{a^2}{r^2}} = \sqrt{\frac{a^2(r^2+1)}{r^2}} \Rightarrow \frac{a\sqrt{r^2+1}}{r} \Rightarrow d = \frac{a}{\sqrt{r^2+1}} = \sqrt{2} \Rightarrow a = \sqrt{2} \cdot \sqrt{r^2+1} = 10$$

$$b = \frac{a}{r} = 10 \Rightarrow A(a,0) = (10,0) \quad B(0,1)$$

$$\begin{cases} m \cdot y - r \cdot x = r \\ y + n \cdot x = a + r \end{cases} \Rightarrow \begin{cases} y = \frac{r}{m}x + r \\ y = -n \cdot x + a + r \end{cases} \Rightarrow \frac{r}{m}x + r = -n \cdot x + a + r \Rightarrow \frac{r}{m}x + r = -n \cdot x + a + r$$

$$S = \frac{a}{r} \Rightarrow \frac{r}{m}x + r = -n \cdot x + a + r \Rightarrow 0 = (-m)x + r \Rightarrow x_B = \frac{-r}{1-m}$$

$$S = |x_B - x_A| = \left| -\frac{r}{1-m} + \frac{m}{r} \right| = \frac{a}{r}$$

$$x=0 \quad y = r(0) - r = -r \quad \text{Punkt } (r, -r) \rightarrow x' = r(0) - 0 = r \quad y' = r(-r) - (-r) = -r^2 + r = -1$$

$$(r, -1) \quad y+1 = r(x-r) \Rightarrow y+1 = rx-r \Rightarrow y = rx-1$$

$$y = x+a \Rightarrow y-x-a=0 \Rightarrow a=1 \rightarrow \text{Punkt } (1,1) \quad y-r = -1(x-1) \Rightarrow y = -x+r \Rightarrow y = x+a \Rightarrow y = x+1$$

$$A(1,1) \quad A'(-1-r, r-(-r)) = (-r, r) \quad r(b-a) = r(1) - (-r) = 1$$