

(۱) زاویه α در مثل قائم الزامی

$\tan \alpha = \frac{y}{x} = \frac{\sqrt{3}}{1} = \sqrt{3}$

$\alpha = 60^\circ$

$y = \sqrt{3}x - 4\sqrt{3} + 2$

معادله خط $2y + 4x = -1$

$2y = -4x - 1$

$y = -2x - \frac{1}{2}$

$y = -2x + 1$

معادله خط $3y = -x + 1 \rightarrow y = -\frac{1}{3}x + \frac{1}{3}$

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معادله خط $2y + 4x = -1$

$2y = -4x - 1$

$y = -2x - \frac{1}{2}$

$y = -2x + 1$

(۲) $\sqrt{(2-(-1))^2 + (3-(-1))^2} = \sqrt{9+16} = 5$

$3x + 4y - 12 = 0$

$3x + 4y = 12$

$3x + 4y - 12 = 0$

$3x + 4y = 12$

$3x + 4y - 12 = 0$

معادله خط $2x + 4y - 4 = 0$

$2x + 4y = 4$

$x + 2y = 2$

$x = 2 - 2y$

$x = 2 - 2y$

$x = 2 - 2y$

معادله خط $2x + 4y - 4 = 0$

$2x + 4y = 4$

$x + 2y = 2$

$x = 2 - 2y$

$x = 2 - 2y$

$x = 2 - 2y$

$\tan \alpha = \left| \frac{m - m'}{1 + mm'} \right| = \left| \frac{1 + 3}{1 + (-3)} \right| = 1$

$\alpha = 45^\circ$

$y + 3x = 3$

$y = -3x + 3$

$y = -3x + 3$

$y = -3x + 3$

$$A = \begin{bmatrix} 2 \\ -2 \end{bmatrix}$$

$$B = \begin{bmatrix} 2 \\ 1 \end{bmatrix}$$

$$\sqrt{(x-1)^2 + (y-2)^2} = 1$$

سے دائرہ میں نقطہ ایسا ہے کہ

$$\begin{cases} \frac{x-1}{2} = -1 \\ \frac{-y+2}{1} = 1 \end{cases}$$

سے مماسیت قائم کرتے ہیں



$$\frac{2-1-1}{2} = -1$$

$$\frac{1+2-2}{1} = 1$$

پہلے مسئلہ سے

$$A = \begin{bmatrix} 2 \\ 1 \end{bmatrix}$$

$$B = \begin{bmatrix} -2 \\ 2 \end{bmatrix}$$

$$C = \begin{bmatrix} -1 \\ 1 \end{bmatrix}$$

$$\begin{vmatrix} 2 & -2 & -1 \\ 1 & 2 & -1 \\ 1 & 1 & 1 \end{vmatrix} = 2(2-1) - 2(1-1) - 1(1-2) = 2(1) - 2(0) - 1(-1) = 2 - 0 + 1 = 3$$

$$\begin{aligned} x' &= -y & -x' &= \frac{-2y'+1}{-2y'-1} \Rightarrow \frac{-2y'+1}{2y'+1} = x' \\ y' &= -x \end{aligned}$$

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

$$\begin{aligned} x' &= y & \frac{2y'+1}{2y'-1} &= x' & \frac{2x'+1}{2x'-1} &= y' \end{aligned}$$

$$\begin{aligned} y' &= -y & -y' &= \frac{x'+1}{2x'+1} \\ -y' &= \frac{x'+1}{2x'+1} \end{aligned}$$

$$\begin{aligned} y &= \frac{2x'+1}{2x'-1} & x' &= x-1 \Rightarrow x = x'+1 \\ y' &= y+1 \Rightarrow y = y'-1 \end{aligned}$$

$$y'-1 = \frac{2(x'+1)+1}{2x'-1} \Rightarrow y' = \frac{2x'+3}{2x'-1} = \frac{2x'+3}{2x'-1} \left[\begin{matrix} 2 \\ -1 \end{matrix} \right]$$

$$\begin{aligned} x' &= x-1 \Rightarrow x = x'+1 & y' &= y+1 \Rightarrow y = y'-1 \end{aligned}$$

$$\Rightarrow y' = \frac{2x'+3}{2x'-1} \left[\begin{matrix} 2 \\ -1 \end{matrix} \right]$$

$$\begin{cases} 2x+5y=2 \\ x-2y=1 \end{cases}$$

$$x = -\frac{5+1}{-12-2} = \frac{14}{14}$$

$$y = \frac{2-2}{-12-2} = -\frac{1}{14}$$

$$\begin{cases} 2x+5y=2 \\ -2x+12y=-2 \end{cases}$$

$$17y = -1 \Rightarrow y = -\frac{1}{17}$$

$$x = \frac{2-5(-\frac{1}{17})}{2} = \frac{19}{34}$$

$$x = \frac{19}{34} = \frac{19}{34}$$