

۲۰

$$m = \frac{2 - (-2)}{1 - \omega} = -2$$

$$y = -2x + b \xrightarrow{x=1} 2 = -2 + b \quad b = 4 \quad y = -2x + 4$$

$$y = -2x + 4$$

$$m = -2 \rightarrow y = -2x + b \xrightarrow{x=1} 2 = -2 + b \quad b = 4 \rightarrow y = -2x + 4$$

$$m = 3 \rightarrow y = 3x + b \xrightarrow{x=1} 2 = 3 + b \quad b = -1 \rightarrow y = 3x - 1$$

$$m = \tan \alpha = \tan \frac{\pi}{3} = \sqrt{3} \rightarrow y = \sqrt{3}x + b \xrightarrow{x=1} 2 = \sqrt{3} + b \quad b = 2 - \sqrt{3}$$

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

$$|d| = \sqrt{(2 - (-1))^2 + (2 - \sqrt{3})^2} = \sqrt{9 + 1} = \sqrt{10}$$

$$فاصله = \frac{|3 \times 2 + 1 \times 3 - 3|}{\omega} = \frac{10}{\omega} = 2$$

۳- (الف) خط دوسرا با دو نقطه دیگر موازی و عمود بر خط اول (ب) یک خط موازی با دو خط دیگر است.

$$C = \frac{4 + C'}{2} = \frac{4 + 12}{2} = 8$$

$$2x + y = 1 \rightarrow 2x + y = 12$$

$$\rightarrow 2x + y = 1$$

$$فاصله = \frac{|C - C'|}{\sqrt{1^2 + 2^2}} = \frac{8}{\sqrt{5}} = \frac{8\sqrt{5}}{5}$$

۴- فرض کنید دو خط از دو نقطه از یک خط موازی می گذرد.

$$\frac{|3x - y - 1|}{\sqrt{10}} = \frac{|2x + y - 3|}{\sqrt{10}}$$

$$3x - y = 1 \rightarrow 2x + y = 3 \rightarrow y = -2x + 3$$

$$3x - y = 1 \rightarrow 3x - (-2x + 3) = 1 \rightarrow 5x = 4 \rightarrow x = \frac{4}{5}$$

$$\tan \alpha = \left| \frac{m-m'}{1+mm'} \right| = \left| \frac{2-(-3)}{1-6} \right| = 1 \quad \alpha = 45^\circ$$

$$m = 2, m' = -3$$

$$d = \sqrt{(2-(-3))^2 + (-2-2)^2} = \sqrt{4^2 + 4^2} = 1$$

$$m = \left| \frac{\frac{2-3}{1}}{\frac{2-3}{1}} \right| = \left| \frac{-1}{1} \right|$$

$$x_m = \frac{m_1 + m_2 + m_3}{3} = \frac{-9}{3} = -3$$

$$y_m = \frac{y_1 + y_2 + y_3}{3} = \frac{-9}{3} = -3$$

$$m = \left| \frac{-3}{3} \right|$$

$$S_2 = \frac{1}{3} \begin{vmatrix} -1 & -2 & 3 \\ -13 & 3 & 1 \\ 1 & 1 & 1 \end{vmatrix} = \frac{1}{3} \left((-1) \times 3 \times 1 + (-2)(1)(1) + (-13) \times 1 \times 3 \right. \\ \left. - 3 \times 3 \times 1 - (-1) \times 1 \times 1 - (-2)(1)(-13) \right) \\ = \frac{1}{3} \left(-3 - 2 - 39 - 9 + 1 - 26 \right) = -28$$

$$y \rightarrow -y \quad y = \frac{2x+1}{x-3} \rightarrow y = \frac{-2x-1}{x-3}$$

$$x \rightarrow -x \quad y = \frac{-2x-1}{x-3}$$

$$x \rightarrow y \quad y = \frac{2y+1}{y-3} \quad y = \frac{-2x-1}{x-3} = \frac{2x+1}{x-3}$$

$$x \rightarrow -y \quad y \rightarrow -x \quad -x = \frac{-2y+1}{-y-3} \rightarrow y = \frac{-2x-1}{x-3} = \frac{2x+1}{x-3}$$

$$x' = x-2 \quad x = x'+2 \quad y' = y+3 \quad y = y'-3$$

$$y' = \frac{2x'+1}{x'-3} = \frac{2(x'+2)+1}{x'-3} = \frac{2x'+5}{x'-3}$$

$$y' = \frac{2x'+5}{x'-3} = \frac{2x'+5}{x'-3}$$

$$(2) - 9$$

$$x' = x - r$$

$$x = x' + r$$

$$y' = y - r$$

$$y = y' + r$$

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

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

$$\begin{cases} x' + y' = 1 \\ x - y = 1 \end{cases} \xrightarrow{x=r} \begin{cases} x' + y' = 1 \\ x' - y' = 1 \end{cases} \Rightarrow 19y' = -1 \Rightarrow y' = -\frac{1}{19}$$

$$(2) = 1.$$

$$x' + 1 = \frac{1}{19} \Rightarrow x' = \frac{1}{19} - 1 = -\frac{18}{19}$$

(5)

$$x = -\frac{1 + 1}{-19 - 1} = \frac{-2}{-20} = \frac{1}{10}$$

$$y = \frac{1 - 1}{-19} = \frac{0}{-19} = 0$$

$$\frac{1}{19}$$

(1)