

①

$$m = \frac{\Delta y}{\Delta x} = \frac{2 - (-2)}{4 - 5} = \frac{4}{-1} = -4$$

(الف)

$$\text{جایگزینی} \rightarrow x = 4 \Rightarrow -4x + b = y \Rightarrow -16 + b = 2 \Rightarrow b = 18$$

$$\Rightarrow y = -4x + 18$$

$$\text{۲ ضلعی} \rightarrow \frac{a}{a'} = \frac{b}{b'} \neq \frac{c}{c'} \Rightarrow m = m'$$

ب.

$$\Rightarrow m' = \frac{\text{ضلع } x}{\text{ضلع } y} = \frac{-4}{2} = -2 \Rightarrow y = -2x + b$$

$$\text{جایگزینی} \rightarrow x = 4 \Rightarrow -8 + b = 2 \Rightarrow b = 10$$

$$\Rightarrow y = -2x + 10$$

$$\text{۳ ضلعی} \rightarrow mm' = -1 \rightarrow m = \frac{\text{ضلع } x}{\text{ضلع } y} = \frac{-1}{3}$$

ج.

$$\rightarrow \frac{-1}{3} \times m' = -1 \Rightarrow m' = 3 \text{ جایگزینی } x = 4$$

$$\rightarrow 12 + b = 2 \Rightarrow b = -10 \Rightarrow y = 3x - 10$$

$$\frac{x}{y} = 4.0 \implies \tan 4.0 = \sqrt{3} = \text{شیب خط} \quad (c)$$

$$\text{حل: } x = \varepsilon \implies \varepsilon \sqrt{3} + b = 2 \implies b = 2 - \varepsilon \sqrt{3}$$

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

$$d = \sqrt{(x_1 - x_2)^2 + (y_1 - y_2)^2} \implies d = \sqrt{(-1 - 2)^2 + (2 - 3)^2} \quad \text{الف}$$

$$\begin{bmatrix} 2 \\ 3 \end{bmatrix}, \begin{bmatrix} -1 \\ 2 \end{bmatrix} \implies d = \sqrt{9 + 14} = \sqrt{23} = \underline{\underline{d}}$$

$$3x + 4y = 3 \xrightarrow{\text{مرتبه 2}} \frac{3x}{a} + \frac{4y}{b} = \frac{3}{c} \quad \text{ب}$$

$$d = \frac{|ax + by + c|}{\sqrt{a^2 + b^2}} \implies \frac{|4 + 12 - 3|}{\sqrt{23}} = \frac{13}{\sqrt{23}} = \frac{13\sqrt{23}}{23} = \underline{\underline{d}}$$

Subject:

Date:

Sa Su Mo Tu We Th Fr

$$2x + 3y = 4 \quad 4x + 4y = 1$$

(3)

معادله خط
و معادله خط
موازی $\rightarrow ax + by + \frac{c+c'}{2} = 0$

(الف)

مستقیم موازی $\rightarrow 2x + 3y - 4 = 0, 2x + 3y - 8 = 0$

$\Rightarrow$ خط وسط: $2x + 3y + \left(\frac{-4-8}{2}\right) = \underbrace{2x + 3y - 6 = 0}$

فاصله خط موازی $\rightarrow \frac{|c - c'|}{\sqrt{a^2 + b^2}} = \frac{|-4 - (-8)|}{\sqrt{4 + 9}}$

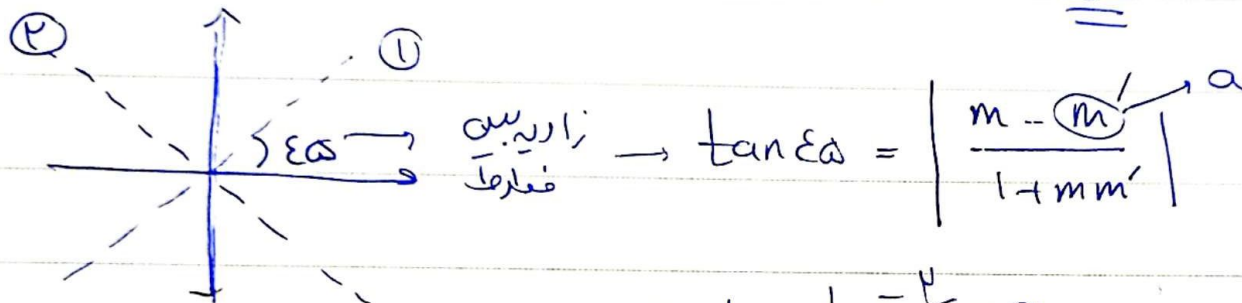
(ب)

$$= \frac{4}{\sqrt{13}} \times \frac{\sqrt{13}}{\sqrt{13}} = \frac{4\sqrt{13}}{13}$$

$$d_1 = r_m + r_y - r \Rightarrow d r_s \quad r_m - r_y - r_s$$

$$m = -\frac{r}{r} \quad m' = \frac{r}{r} \Rightarrow \text{bit}$$

(1)



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

$$\Rightarrow 1 = \left| \frac{-\frac{r}{r} - a}{1 - \frac{r}{r}a} \right|$$

$$\Rightarrow 1 = \frac{-\frac{r}{r} - a}{1 - \frac{r}{r}a} \Rightarrow 1 = \frac{-r - ra}{r - ra} \Rightarrow r - ra = -r - ra$$

$$a = -a \Rightarrow -a x + b = y$$

$$\Rightarrow -1 = \frac{-r - ra}{r - ra} \Rightarrow ra - r = -r - ra$$

$$2a = 1$$

$$\Rightarrow a = \frac{1}{2} \Rightarrow \frac{1}{2}x + b = y$$

RISL GROUP

نقطه برخورد خط با دایره، مرکز دایره

$$\frac{m_{n-1}}{r} = \frac{m_{n-1}}{r} \Rightarrow 9n - m = 4 - 8n$$

$$13n = 4 \Rightarrow n = \frac{4}{13}$$

$$n = \frac{4}{13}$$

$$\rightarrow m_{n-1} : m_y \Rightarrow \frac{rV}{13} - 1 = m_y$$

$$\Rightarrow \frac{rV-13}{13} = m_y \Rightarrow y = \frac{V}{13}$$

$$\rightarrow \textcircled{1} - 8 \times \frac{4}{13} + b = \frac{V}{13} \Rightarrow b = \frac{8V+V}{13}$$

$$\Rightarrow b = \frac{8V}{13} = 8 \Rightarrow \textcircled{1} - 8n + 8 = b$$

$$\rightarrow \textcircled{2} \frac{1}{0} \times \frac{4}{13} + b = \frac{V}{13} \Rightarrow b = \frac{V}{13} - \frac{4}{13}$$

$$\Rightarrow b = \frac{rV}{13} = \frac{r}{13} \Rightarrow \frac{1}{13} n + \frac{r}{13} = y$$

$$y - m = a, \quad y + m = \mu \rightarrow \alpha ??$$

$$m = +r$$

$$m' = -r$$

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

$$\Rightarrow \tan \alpha = \left| \frac{r - (-r)}{1 - 4} \right| = \left| \frac{2}{-3} \right| = 1 \Rightarrow \alpha = 45^\circ \textcircled{1}$$

زاویه کوچک

$\beta < 135^\circ$

$$\textcircled{2} \left| \frac{-r - (-r)}{1 - 4} \right| = 1$$

زاویه بزرگتر

$$A \begin{vmatrix} w \\ -r \end{vmatrix} \quad B \begin{vmatrix} -a \\ r \end{vmatrix}$$

(4)

$$d = \sqrt{(x_A - x_B)^2 + (y_A - y_B)^2}$$

(الف)

$$\Rightarrow d = \sqrt{1^2 + 4^2} = \underline{\underline{10}}$$

$$\text{مركز} \Rightarrow \frac{x_A + x_B}{2} = x_M, \quad \frac{y_A + y_B}{2} = y_M$$

(ج)

$$\Rightarrow \frac{w-a}{r} = -1, \quad \frac{r-r}{r} = 1 \Rightarrow M = (-1, 1)$$

$$x_M = \frac{x_A + x_B + x_C}{3} = \frac{-1 - 1 + w}{3} = \underline{\underline{w}}$$

(الف) (✓)

$$y_M = \frac{y_A + y_B + y_C}{3} = \frac{-1 + w + 1}{3} = \underline{\underline{w}} \Rightarrow M = (-w, -w)$$

$$S = \frac{1}{r} \begin{vmatrix} w & +1 & 1 \\ -r & w & 1 \\ -1 & -1 & 1 \end{vmatrix} = \frac{1}{r} (9 + (-10) + 14 - (-w)) - (-r) - (-w)$$

(ج)

$$= \frac{1}{r} (9 - 10 + 14 + w + r + w) = 8$$

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

(1)

الف) نسبت به محور ها $\leftarrow$ معادله

$$\Rightarrow -y = \frac{2x+1}{5x-3} \Rightarrow y = \frac{-2x-1}{5x-3}$$

ب) نمودار ها $\leftarrow$ معادله

$$y = \frac{1-2x}{-5x-3}$$

ج) نقطه اول و دوم $\leftarrow$ معادله

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

$$\rightarrow 5xy - 3x = 2y + 1 \Rightarrow 5xy - 2y = 3x + 1$$

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

د) ناحیه دوم و $\leftarrow$ معادله و ناحیه اول $\leftarrow$ معادله

$$y = \frac{3x+1}{5x-2} \xrightarrow{\text{ناحیه دوم}} \frac{3x+1}{5x-2} = y \xrightarrow{\text{معادله}}$$

$$\frac{-3x-1}{-5x-2} = -y \Rightarrow y = \frac{1-3x}{5x+2}$$

$$y = \frac{r_{n+1}}{n-r}$$

⑨

$$n' = n - r \Rightarrow n' + r = n$$

$$y' = y + r \Rightarrow y' - r = y$$

الف) مركز $\frac{r}{-r}$

$$(y' - r) = \frac{r(n' + r) + 1}{n' + r - r} \Rightarrow y' - r = \frac{rn' + d}{n' - 1}$$

$$y' = \frac{rn' + d}{n' - 1} + r \Rightarrow y' = \frac{rn' + d + rn' - r}{n' - 1}$$

$$\Rightarrow y' = \frac{dn' + r}{n' - 1}$$

$$n' = n - r \quad y' = y - r$$

$$n' + r = n \quad y' + r = y$$

ب.

$$y' + r = \frac{r(n' + r) + 1}{n' + r - r} \Rightarrow y' + r = \frac{rn' + v}{n'}$$

$$y' = \frac{rn' + v - rn'}{n'} \Rightarrow y' = \frac{v}{n'}$$

$$\begin{cases} 12x + 14y = 1 \\ x - 8y = 1 \end{cases}$$

(10)

$$\begin{aligned} &\omega \times \begin{cases} 12x + 14y = 1 \\ x - 8y = 1 \end{cases} \\ &\varepsilon \times \begin{cases} 12x + 14y = 1 \\ x - 8y = 1 \end{cases} \end{aligned}$$

(الف)

$$\Rightarrow \begin{cases} 12x + 14y = 1 \\ \varepsilon x - 8y = \varepsilon \end{cases}$$

$$19x = 1\varepsilon \Rightarrow x = \frac{1\varepsilon}{19}$$

$$\frac{1\varepsilon}{19} - 8y = 1$$

$$-8y = 1 - \frac{1\varepsilon}{19}$$

$$-8y = \frac{19 - 1\varepsilon}{19} \Rightarrow y = \frac{-1}{19}$$

$$x = \frac{\varepsilon - (-1)}{(-19) - 8} \quad y = \frac{1 - 1}{(-19) - 8}$$

↩

$$\Rightarrow x = -\frac{1\varepsilon}{-19} \quad y = \frac{1}{-19}$$

$$\underline{x = \frac{1\varepsilon}{19}, y = \frac{-1}{19}}$$