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مقطع: یازدهم دفتر A

الف) $\begin{vmatrix} 1 & 0 \\ 1 & -1 \end{vmatrix} \rightarrow \frac{0}{-1} = -1 \quad y = -x + 1$

ب) $2y + 4x + 1 = 0 \rightarrow \frac{0}{4} = -1 \quad y = -x + 1$

ج) $x + 3y - 1 = 0 \rightarrow \frac{0}{3} = -\frac{1}{3} \quad y = -\frac{1}{3}x + \frac{1}{3}$

د) $\frac{2}{3} = 0 \rightarrow \tan \theta = \sqrt{3} \quad y = \sqrt{3}x + 1$

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الف) $A/\frac{1}{\sqrt{2}} \quad B/\frac{-1}{\sqrt{2}} \rightarrow d = \sqrt{a^2 + b^2} \Rightarrow \sqrt{1+1} = \sqrt{2}$

ب) $3x + 4y - 12 = 0 \rightarrow d = \frac{|ax+by+c|}{\sqrt{a^2+b^2}} = \frac{|12-12-12|}{\sqrt{25}} = \frac{12}{5}$

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$2x + 3y - 6 = 0 \quad 4x + 6y - 12 = 0$

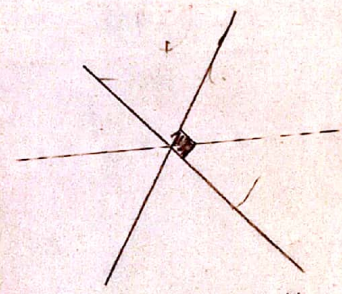
الف) $2x + 3y - 6 = 0$

ب) $4x + 6y - 12 = 0$

فاصله نقطه $(0,0)$ از خط $2x+3y-6=0$ را بیابید.

ب) $d = \frac{|ax+by+c|}{\sqrt{a^2+b^2}} = \frac{|12-12-12|}{\sqrt{25}} = \frac{12}{5}$

دو خط بر هم عمودند زیرا ضرب ضرایب -1 است.



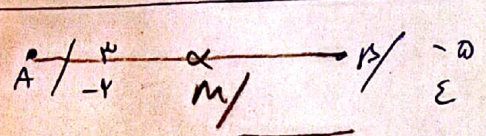
$\frac{|ax+by+c|}{\sqrt{a^2+b^2}} = \frac{|a'x+b'y+c'|}{\sqrt{a'^2+b'^2}} \rightarrow \frac{|2x-3y-1|}{\sqrt{13}} = \frac{|2x+3y-12|}{\sqrt{13}}$

① $2x-3y-1 = 2x+3y-12 \Rightarrow -6y = -11 \Rightarrow y = \frac{11}{6}$

② $2x-3y-1 = -(2x+3y-12) \Rightarrow 4x = 13 \Rightarrow x = \frac{13}{4}$

$y + 2x = 12 \quad y - 2x = 8$

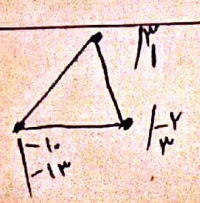
$\tan \alpha = \left| \frac{m-m'}{1+mm'} \right| = \left| \frac{0-1}{1+0} \right| = 1 \Rightarrow \alpha = 45^\circ$



الف) $d = \sqrt{a^2 + b^2} = 10$

ب) $M/\frac{-8+12}{4} = -1 \quad \frac{1-12}{4} = 1$

$\begin{vmatrix} 1 & 1 & 1 \\ 2 & -2 & 1 \\ 3 & -1 & -1 \end{vmatrix} = 1(-2-1) - 1(-2-3) + 1(2-6) = -3 + 5 - 4 = -2$
 $\frac{-2}{\sqrt{1+4+1}} = \frac{-2}{\sqrt{6}}$



الف) $G/\frac{12-12-12}{12} = -1 \quad \frac{1+12-12}{12} = 1$

ب) $\frac{1}{4} \begin{vmatrix} 1 & 1 & 1 \\ 2 & -2 & 1 \\ 3 & -1 & -1 \end{vmatrix} = \frac{1}{4}(-2) = -\frac{1}{2}$

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$$y = \frac{2u+1}{4u-3}$$

الف) فرض کنیم $y = \frac{2u+1}{4u-3}$: قرینه نسبت به محور u (اف)

ب) طول قرینه y : $y = \frac{2u+1}{-4u-3}$

ج) قرینه نسبت به مبدأ اول و دوم : $\begin{matrix} u \rightarrow y \\ y \rightarrow u \end{matrix} \rightarrow u = \frac{2y+1}{4y-3} \rightarrow y = \frac{2u-1}{-4u-3}$

د) $\begin{matrix} u \rightarrow -y \\ y \rightarrow -u \end{matrix} \rightarrow -u = \frac{-2y+1}{-4y-3} \rightarrow y = \frac{2u-1}{-4u-3}$

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

$$/0 \rightarrow /2 \quad u$$

$$\begin{cases} u' = u - \alpha \rightarrow u' = u - 2 \rightarrow u' + 2 = u \\ y' = y - \beta \rightarrow y' = y + 3 \rightarrow y' - 3 = y \end{cases}$$

الف) $y' - 3 = \frac{2u' + \omega}{u' - 1} \rightarrow y' = \frac{2u' + \omega + 3u' - 3}{u' - 1}$

$$y' = \frac{5u' + 2}{u' - 1}$$

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ب) $/0 \rightarrow /2 \rightarrow$

$$\begin{cases} u' = u - 2 \rightarrow u' + 2 = u \\ y' = y + 3 \rightarrow y' - 3 = y \end{cases}$$

$$y' + 2 = \frac{2u' + 4}{u'} \rightarrow y' = \frac{2u' + 4 - 2u'}{u'} = \frac{4}{u'}$$

$$y' = \frac{4}{u'}$$

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$$\begin{cases} 3u + 4y = 2 \\ u - 5y = 1 \end{cases}$$

الف) از روش ضریب :

$$\begin{cases} 3u + 4y - 2 = 0 \\ -5(u - 5y - 1) = 0 \end{cases} \rightarrow -5u + 25y + 5 = 0 \Rightarrow 14y = -1$$

$$\begin{cases} y = -\frac{1}{14} \\ u = \frac{18}{14} \end{cases}$$

ب) از روش کرام : $u = -\frac{6+10}{-10-8} = \frac{16}{18}$

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$$y = \frac{2-2}{-8-10} = -\frac{1}{18}$$