

۱۹, ۵

الف) $y - 2 = \frac{-4}{1}(x - 1) \Rightarrow y - 2 = -4x + 4 \Rightarrow y = -4x + 11$ ✓

(۲)

ب) $\frac{-y}{1} = -4x + 4 \Rightarrow y - 2 = -4(x - 1) \Rightarrow y = -4x + 11$ ✓

ج) $\frac{1}{4}x + m = -1 \Rightarrow m = -\frac{5}{4} \Rightarrow y - 2 = \frac{5}{4}(x - 1) \Rightarrow y = \frac{5}{4}x - \frac{3}{4}$ ✓

د) $\tan \frac{\pi}{4} = 1 \Rightarrow y - 2 = 1(x - 1) \Rightarrow y = x + 1$ ✓

الف) $\sqrt{(x+1)^2 + (y-2)^2} = 5$ ✓

(۲)

ب) $2x + 3y - 2 = 0 \Rightarrow \frac{|2x + 3y - 2|}{\sqrt{2^2 + 3^2}} = \frac{10}{5} = 2$ ✓

الف) $\begin{cases} 2x + 3y = 4 \\ 2x + 3y = 2 \end{cases} \Rightarrow 2x + 3y = 0 \Rightarrow y = -\frac{2}{3}x + \frac{0}{3}$ ✓

(۲)

ب) $\frac{|4 - 2|}{\sqrt{2^2 + 3^2}} = \frac{2}{5}$ ✓

$(x, y) \Rightarrow \frac{|2x - 3y - 1|}{\sqrt{13}} = \frac{|2x + 3y - 2|}{\sqrt{13}} \Rightarrow \begin{cases} 2x - 3y - 1 = 2x + 3y - 2 \\ 2x - 3y - 1 = -(2x + 3y - 2) \end{cases} \Rightarrow \begin{cases} -6y = -1 \\ 4x = 3 \end{cases}$ ✓

(۲)

$2x - 3y - 1 = -2x - 3y + 2 \Rightarrow 4x = 3 \Rightarrow x = \frac{3}{4}$ ✓

مثال: $m = \frac{1}{2}, m' = -\frac{2}{1}$

$\alpha = \frac{\pi}{4} = 45^\circ$ ✓

$\left| \frac{m - m'}{1 + mm'} \right| = \left| \frac{1 - (-2)}{1 - 2} \right| = 1 = \tan \alpha$

(۲)

$$الف) \sqrt{x^2 + y^2} = 10 \checkmark$$

(2)

$$ب) (-1, 1) \checkmark$$

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$$الف) x = \frac{3-2-10}{3} = -3 \quad y = \frac{1+3-13}{3} = -3 \quad (-3, -3) \checkmark$$

(2)

$$ب) \frac{1}{4} \begin{vmatrix} -10 & -2 & 3 \\ -13 & 3 & 1 \\ 1 & 1 & 1 \end{vmatrix} = \frac{1}{4} (30 - 39 - 2 - (9 - 10 + 13)) = \frac{1}{4} \times |-94| = 23.5 \checkmark$$

$$الف) \frac{2n+1}{4n-2} = y \Rightarrow \frac{-2n-1}{4n+2} = y \quad \text{عرض قرینه نیست!}$$

(1, 5)

$$ب) \frac{2n+1}{4n-2} = y \quad \text{فقره قرینه یا در صورت}$$

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$$2) n = \frac{2y+1}{4y-2} \Rightarrow y = -\frac{-2n-1}{4n-2} = \frac{2n+1}{4n-2} = y \checkmark$$

$$3) 2 \Rightarrow \frac{2n+1}{4n-2} = y \Rightarrow \frac{-2n-1}{4n+2} = y \Rightarrow \frac{-2n+1}{4n+2} = y \quad \text{دقت!}$$

$$الف) \begin{matrix} n' = n-2 \Rightarrow n = n'+2 \\ y' = y+2 \end{matrix} \quad y'-2 = \frac{2(n'+2)+1}{n'+2-2} \Rightarrow y' = \frac{2n'+5}{n'-1} \checkmark$$

(2)

$$ب) \begin{matrix} n' = n-2 & n = n'+2 \\ y' = y-2 & y = y'+2 \end{matrix} \quad y'+2 = \frac{2(n'+2)+1}{n'+2-2} \Rightarrow y' = \frac{2n'+5}{n'} \checkmark$$

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$$الف) \begin{cases} 3x+4y=2 \\ x-2y=-3 \end{cases} \quad 19y=-1 \quad y = -\frac{1}{19} \quad x = \frac{14}{19} \checkmark$$

(2)

$$ب) \begin{matrix} x & y \\ \begin{vmatrix} 3 & 4 \\ -1 & 2 \end{vmatrix} & \begin{vmatrix} 2 & 1 \\ -3 & -2 \end{vmatrix} \end{matrix} \Rightarrow \begin{matrix} x = -\frac{4+10}{-10-4} = \frac{14}{14} = 1 \checkmark \\ y = \frac{3-2}{-10-4} = -\frac{1}{14} \checkmark \end{matrix}$$

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