اسلام رضوانی راد — یازدهم پسر B

۱- الف) $m = \frac{\Delta y}{\Delta x} = -4$

$y = -4x + b \quad 2 = -16 + 18$

$\Rightarrow y = -4x + 18$

ب) $m = \frac{-6}{2} = -3 \quad y = -3x + b$

$2 = -12 + 14 \Rightarrow y = -3x + 14$

ج) $m = \frac{-1}{m'} \quad y = 3x + b$

$m' = \frac{-1}{3} \Rightarrow m = 3 \quad 2 = 12 - 10$

د) $\tan\frac{\pi}{4} = \tan 45 = m = \sqrt{2} \quad 2 = 4\sqrt{2} + 2 - 4\sqrt{2} \Rightarrow y = \sqrt{2}x + 2 - 4\sqrt{2}$

۲- الف) $d = \sqrt{\Delta x^2 + \Delta y^2} = \sqrt{16 + 9} = 5$

ب) $d = \frac{|ax + by + c|}{\sqrt{a^2 + b^2}} = \frac{6 + 12 - 3}{5} = 3$

۳- الف) $2x + 3y = \frac{|c + c'|}{2} \Rightarrow 2x + 3y = 5$

$\hookrightarrow \frac{6+4}{2} = 5$

ب) $\frac{|c - c'|}{\sqrt{a^2 + b^2}} = \frac{6 - 4}{\sqrt{9 + 4}} = \frac{2\sqrt{13}}{13}$

۴- هر نقطه روی نیمساز دو خط، از هر دو به یک فاصله است.

$$\frac{|2x + 3y - 3|}{\sqrt{13}} = \frac{|3x - 2y - 1|}{\sqrt{13}} \Rightarrow \begin{cases} 2x + 3y - 3 = 3x - 2y - 1 \rightarrow 5y - x - 2 = 0 \\ 2x + 3y - 3 = 2y + 1 - 3x \rightarrow 5x + y - 4 = 0 \end{cases}$$

۵- $\tan\alpha = \frac{|m_2 - m_1|}{|1 + m_1 m_2|} = \frac{5}{5} = 1$

$m_2 = 2 \quad m_1 = -3 \quad \Rightarrow \alpha = 45° = \frac{\pi}{4}$

۶- الف) $\sqrt{64 + 36} = 10$

ب) $\frac{-5+3}{2} = 1 \quad \frac{4-2}{2} = 1 \rightarrow (1, 1)$

۷- الف) $\frac{-10 - 2 + 3}{3} = -3 \quad (-3, -3)$

$\frac{-13 + 3 + 1}{3} = -3$

ب) $\frac{1}{2}\begin{vmatrix} 3 & 1 & 1 \\ -2 & 3 & 1 \\ -10 & -13 & 1 \end{vmatrix} \Rightarrow \frac{9 + 26 - 10 + 30 + 39 + 2}{2}$

$= \frac{96}{2} = 48$

۸- الف) $-y = \frac{2x + 1}{4x - 3} \longrightarrow$

ب) $y = \frac{-2x + 1}{-4x - 3} \longrightarrow$

ج) $x = \frac{2y + 1}{4y - 3} \Rightarrow y = \frac{3x + 1}{4x - 2} \longrightarrow$

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

۹- الف) $x - 2 = x' \Rightarrow x' + 2 = x$

$y + 3 = y' \Rightarrow y' - 3 = y$

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

ب) $x - 2 = x' \Rightarrow x' + 2 = x$

$y - 2 = y' \Rightarrow y' + 2 = y$

$y' + 2 = \frac{2x' + 7}{x'} \Rightarrow y' = \frac{7}{x'}$

(1) $3x+4y=2$

$-3x+10y=-2$

$14y=-1 \Rightarrow y=\frac{-1}{14}$, $x=\frac{42}{14\times3}=\frac{14}{19}$

(2) $x=-\frac{14}{-19}$ $y=\frac{1}{-19}$

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