

۱۹، ۷۵ آفرین!

نام و نام خانوادگی: ... پاسخنامه تشریحی تکلیف شماره ۱۵... کلاس: ...

(الف) $m = \frac{-2-2}{5-2} = -2 \Rightarrow y-2 = -2(x-2) \Rightarrow y = -2x+11 \quad \underline{y+2x=11} \quad \checkmark$

(ب) $m = \frac{-2}{5} = -\frac{2}{5} \Rightarrow y-2 = -\frac{2}{5}(x-2) \Rightarrow y = -\frac{2}{5}x + \frac{14}{5} \Rightarrow \underline{y+2x=14} \quad \checkmark$

(ج) $m = -(\frac{-2}{5}) = \frac{2}{5} \Rightarrow y-2 = \frac{2}{5}(x-2) \Rightarrow y = \frac{2}{5}x - \frac{2}{5} \Rightarrow \underline{y-2x=-2} \quad \checkmark$

(د) $m = \tan \alpha = \tan(\frac{\pi}{3}) = \sqrt{3} \Rightarrow y-2 = \sqrt{3}(x-2) \Rightarrow \underline{y = \sqrt{3}x - 2\sqrt{3} + 2} \quad \checkmark$

(الف) $d = \sqrt{(x_1-x_2)^2 + (y_1-y_2)^2} \Rightarrow \sqrt{(2-1)^2 + (3-2)^2} = \sqrt{1+1} = \sqrt{2} = \underline{1.41} \quad \checkmark$

(ب) $d = \frac{|ax+by+c|}{\sqrt{a^2+b^2}} \Rightarrow \frac{|3(2)+4(3)-11|}{\sqrt{3^2+4^2}} = \frac{10}{5} = \underline{2} \quad \checkmark$

(الف) $2x+3y=4 \xrightarrow{\times 2} 4x+6y=8 \rightarrow \underline{C+C'=C''}$
 $\Rightarrow 4x+6y = \frac{8+4}{2} \Rightarrow \underline{4x+6y=12} \quad \checkmark$

(ب) $\frac{|C-C'|}{\sqrt{a^2+b^2}} \Rightarrow \frac{|8-4|}{\sqrt{4^2+6^2}} = \frac{4}{\sqrt{52}} = \frac{4}{2\sqrt{13}} = \underline{\frac{2}{\sqrt{13}}} \quad \checkmark$

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

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

$\Rightarrow 3x-2y-1 = -2x-3y+3 \Rightarrow 5x+y=4 \Rightarrow \underline{y = 4-5x} \quad \checkmark$

$y-2x=5 \Rightarrow m_1 = \frac{-(-2)}{1} = 2, \quad y+3x=3 \Rightarrow m_2 = \frac{-3}{1} = -3$

$\tan \theta = \left| \frac{m_2 - m_1}{1 + m_1 m_2} \right| \Rightarrow \left| \frac{-3 - 2}{1 + (-3)(2)} \right| = \left| \frac{-5}{-5} \right| = 1 \Rightarrow \theta = \underline{45^\circ} \quad \checkmark$

$$d = \sqrt{(x_1 - x_2)^2 + (y_1 - y_2)^2} \Rightarrow \sqrt{(3 - (-1))^2 + (-2 - 4)^2} = \sqrt{16 + 36} = \sqrt{100} = 10 \quad \checkmark \text{ (الف)}$$

$$\left(\frac{x_1 + x_r}{r}, \frac{y_1 + y_r}{r}\right) \Rightarrow \left(\frac{r - \omega}{r}, \frac{-r + r}{r}\right) = (-1, 1) \checkmark$$

$$\text{مركز ثقل} = \left(\frac{x_1 + x_2 + x_3}{3}, \frac{y_1 + y_2 + y_3}{3} \right) \Rightarrow \left(\frac{3-2-1}{3}, \frac{1+3-13}{3} \right) = (-3, -3) \checkmark \text{ (الف)}$$

$$S = \frac{1}{r} \times \begin{vmatrix} r & 1 & 1 \\ -r & r & 1 \\ -10 & -1r & 1 \end{vmatrix} = \frac{1}{r} \times 99 = \boxed{99} \checkmark$$

$$x \rightarrow -x \Rightarrow y = \frac{-x+1}{-x-1}$$

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

$$\begin{cases} x \rightarrow -y \\ y \rightarrow -x \end{cases} \rightarrow -x = \frac{-xy + 1}{-xy - 1}$$

(7) $\begin{cases} x \rightarrow y \\ y \rightarrow x \end{cases} = \text{مکمل} \Rightarrow \text{اجاب جانی فوراً نہ کہہ سکتے} \Rightarrow \text{اجاب جانی فوراً نہ کہہ سکتے} \Rightarrow \text{اجاب جانی فوراً نہ کہہ سکتے}$

$$\rightarrow y = -\frac{3x-1}{5x+4} \quad \checkmark$$

$$\begin{aligned} \begin{cases} x' = x - r \\ y' = y + r \end{cases} &\Rightarrow \begin{cases} x = x' + r \\ y = y' - r \end{cases} \Rightarrow y' - r = \frac{r(x' + r) + 1}{x' + r - r} \Rightarrow y' = \frac{rx' + \Delta}{x' - 1} + r \\ \Rightarrow y' &= \frac{\Delta x' + r}{x' - 1} \quad \checkmark \end{aligned}$$

$$\begin{cases} x' = x - r \\ y' = y - r \end{cases} \Rightarrow \begin{cases} x = x' + r \\ y = y' + r \end{cases} \Rightarrow y' + r = \frac{r(x' + r) + 1}{x' + r - r} \Rightarrow y' = \frac{rx' + r}{x'} - r \Rightarrow y' = \frac{V}{x'}$$

$$x = \begin{cases} 3x + 4y = 2 \\ x - 5y = 1 \end{cases} \Rightarrow \begin{cases} 3x + 4y = 2 \\ -3x + 15y = -3 \end{cases} \xrightarrow{+} 19y = -1 \Rightarrow y = \underline{\underline{-\frac{1}{19}}} \text{ ✓}, x = 1 - \frac{5}{19} = \underline{\underline{\frac{14}{19}}} \text{ ✓ (الف)}$$

$$x = - \frac{\begin{vmatrix} 1 & 1 \\ 1 & 1 \end{vmatrix}}{\begin{vmatrix} 1 & 1 \\ 1 & 1 \end{vmatrix}} = - \frac{1}{-1} = \boxed{1} \quad y = \frac{\begin{vmatrix} 1 & 1 \\ 1 & 1 \end{vmatrix}}{-1} = \boxed{-1}$$