

نام و نام خانوادگی آبرو آرزو پاسخنامه تشریحی تکلیف شماره ۱۵ کلاس A

الف) $m = \frac{-1-2}{2-2} = -2 \rightarrow y-2 = -2(x-2) \rightarrow y = -2x+6$

ب) $|y+2|=0 \rightarrow y = -2x - \frac{1}{2} \rightarrow m = -2 \Rightarrow y-2 = -2(x-2) \Rightarrow y = -2x+6$

ج) $x+2y=1 \rightarrow y = -\frac{1}{2}x + \frac{1}{2} \rightarrow m = -\frac{1}{2} \rightarrow m' = 2 \Rightarrow y-2 = 2(x-2) \rightarrow y = 2x-2$

د) $m = \tan \frac{\pi}{3} = \sqrt{3} \rightarrow y-2 = \sqrt{3}(x-2) \rightarrow y = \sqrt{3}x - 2\sqrt{3} + 2$

الف) $|AB| = \sqrt{(7-3)^2 + (-1-2)^2} = 5$

ب) $d = \frac{|3(2) + 4(3) - 3|}{\sqrt{9+16}} = \frac{10}{5} = 2$

$2x+4y=3 \rightarrow 2x+4y-3=0$
 $a=2, b=4, c=-3$

الف) $\rightarrow \begin{cases} 2x+4y=12 \\ 2x+4y=8 \end{cases} \rightarrow 2x+4y = \frac{12+8}{2} \rightarrow 2x+4y=10$

ب) $\rightarrow \begin{cases} 2x+4y=12 \\ 2x+4y=8 \end{cases} \rightarrow d = \frac{|12-8|}{\sqrt{4+16}} = \frac{4}{\sqrt{20}} = \frac{2\sqrt{5}}{5}$

$2x-4y-1=0, 2x+4y-3=0$

$\frac{|2x+4y-1|}{\sqrt{4+16}} = \frac{|2x+4y-3|}{\sqrt{4+16}} \rightarrow |2x-4y-1| = |2x+4y-3|$

$2x-4y-1 = -2x-4y+3$
 $4x = 4 \Rightarrow x=1$

$2x-4y-1 = 2x+4y-3$
 $-8y = -2 \Rightarrow y = \frac{1}{4}$

$y = -2x+3, y = 2x+3$
 $m = -2, m' = 2$

$\tan \alpha = \left| \frac{-2-2}{1-4} \right| = 1 \rightarrow \alpha = \frac{\pi}{4}$

الف) $|AB| = \sqrt{(-5-3)^2 + (4+2)^2} = \boxed{10}$

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

الف) $x_G = \frac{-10 - 2 + 3}{3} = -3, y_G = \frac{-13 + 3 + 1}{3} = -3 \rightarrow (-3, -3)$

ب) $A = \frac{1}{2} |x_1(y_2 - y_3) + x_2(y_3 - y_1) + x_3(y_1 - y_2)|$
 $= \frac{1}{2} |4 \cdot 1 + 3 + 10| = \boxed{9}$

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

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

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

الف) $x' = x-2, y' = y+3 \rightarrow y+3 = \frac{2(x-2)+1}{x-2+1} \rightarrow y = \frac{2x-3}{x-1} - 3 \rightarrow y = \frac{-x}{x-1}$

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

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

الف) $\begin{cases} 3x + 5y = 2 \\ -3x + 15y = -3 \end{cases}$

$19y = -1 \rightarrow y = -\frac{1}{19} \rightarrow x = \frac{17}{19}$

ب) $D = \begin{vmatrix} 3 & 5 \\ 1 & -5 \end{vmatrix} = -16, D_x = \begin{vmatrix} 2 & 5 \\ 1 & -5 \end{vmatrix} = -11, D_y = \begin{vmatrix} 3 & 2 \\ 1 & 1 \end{vmatrix} = 1$

$x = \frac{D_x}{D} = \frac{-11}{-16} = \frac{11}{16}, y = \frac{D_y}{D} = \frac{1}{-16} = -\frac{1}{16}$