Date: / / Sat Sun Man Tue Thu Wed Fri

Subject: مرتاب قدیری

۱۸٫۵

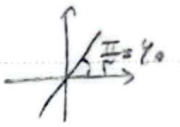
۱- الف) $A(4,2)\ B(5,-2) \rightarrow m = \frac{2+4}{4-5} = -6$

ب) $y = -4x + h \quad 2 = -16 + h \hookrightarrow 18 \Rightarrow \boxed{y = -4x + 18}$

ج) $y = -\frac{1}{3}x - \frac{1}{2}$, $A(4,2) \rightarrow 2 = -12 + h \hookrightarrow 14 \Rightarrow \boxed{y = -3x + 14}$

د) $y = \frac{1}{3}x + \frac{1}{3} \rightarrow m' = 3$, $A(4,2) \rightarrow y = 12x + h \quad 2 = 12 + h \hookrightarrow -10 \Rightarrow \boxed{y = 3x - 10}$

ه) $m = \tan 60 = \sqrt{3} \rightarrow y = \sqrt{3}x + h \rightarrow \boxed{y = \sqrt{3}x - 4\sqrt{3} + 2}$



۲- الف) $A(2,3), B(-1,7) \rightarrow L = \sqrt{(2+1)^2 + (3-7)^2} = 5$

ب) $A(2,3), 3x + 4y - 3 = 0 \rightarrow L = \frac{3\times 2 + 4\times 3 - 3}{\sqrt{3^2+4^2}} = \frac{15}{5} = 3$

۳- الف) $A: 4x + 4y - 8 = 0 \quad \frac{-4}{2} = -2$

$B: 2x + 2y - 4 = 0 \Longrightarrow \boxed{2x + 2y - 5 = 0}$

ب) $\frac{|k - k'|}{\sqrt{a^2+b^2}} = \frac{|1 - 4 + 4|}{\sqrt{2^2+2^2}} = \frac{2}{\sqrt{12}} = \frac{2\sqrt{12}}{12}$

۴- $\frac{2x - 2y - 1}{5} = \pm(2x + 2y - 3) \quad \begin{cases} x - 5y + 2 = 0 \\ 5x + y - 4 = 0 \end{cases}$ ۱٫۷۵

۵- $y = 3x - 5 \quad y = -2x + 3$, $\theta = \beta - \alpha$

$\tan(\theta) = \frac{-2-3}{1-6} = \frac{-5}{-5} = 1 \rightarrow \boxed{\theta = 45^\circ}$

۶- $A(3,-2), B(-5,4) \rightarrow L = \sqrt{(3+5)^2 + (4+2)^2} = 10$

الف) $L = 10$

ب) $mx = \frac{3-5}{2} = -1$, $my = \frac{4-2}{2} = 1$ $\Big\} m(-1,1)$

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۷- الف) $G_x = \frac{-10+3-2}{3} = -3 , G_y = \frac{-13+3+1}{3} = -3 \Rightarrow G(-3,-3)$ ۱,۲۵

ب) AB خط: $m = \frac{-2-3}{3-1} = -\frac{5}{2} \rightarrow y = -\frac{5}{2}x + h \Rightarrow y = -\frac{5}{2}x - 2$

$AB = \sqrt{(-2-3)^2 + 2^2} = \sqrt{29}$

$CH = \frac{|-13 + \frac{5}{2}(-10) + 2|}{\sqrt{1+\frac{25}{4}}} = \frac{36}{\frac{\sqrt{29}}{2}} = \frac{72}{\sqrt{29}}$ } $S = \frac{72}{\sqrt{29}} \times \sqrt{29} \times \frac{1}{2} = 36$

$S = \frac{1}{2}\begin{vmatrix} 3 & 1 & 1 \\ -2 & 3 & 1 \\ -10 & -13 & 1 \end{vmatrix} = 48$

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

ب) قرینه x ها $\longrightarrow y = \frac{-2x+1}{-4x-3}$ ۲

ج) نیمساز ۱ و ۳ $\longrightarrow$ جای x و y عوض $\rightarrow x = \frac{2y+1}{4y-3} \rightarrow 4yx - 3x = 2y + 1$
$y(4x-2) = 3x+1$
$y = \frac{3x+1}{4x-2}$

د) نیمساز ۲ و ۴ $\longrightarrow -x = \frac{-2y+1}{-4y-3} \rightarrow 4xy + 3x = -2y + 1$
$y(4x+2) = 1-3x$
$y = \frac{1-3x}{4x+2}$

۹- الف) $x' = x-2 , y' = y+3 \longrightarrow x = x'+2 , y = y'-3$
$y' - 3 = \frac{2x'+4+1}{x'+2-1} \Rightarrow y' = \frac{2x'+5}{x'+1} + 3 = \frac{5x'+8}{x'+1}$ ۲

ب) $x' = x-3 , y' = y-2 \rightarrow x = x'+3 , y = y'+2$
$y' + 2 = \frac{2x'+6+1}{x'+3-3} \rightarrow y' = \frac{2x'+7-2x'}{x'} = \frac{7}{x'}$

۱۰- حذفی
$$\begin{cases} 3x+4y=2 \\ x-5y=1 \quad (\times -3) \end{cases}$$
$-3x+15y=-3$
$19y=-1 \rightarrow y = -\frac{1}{19}$
$x + \frac{5}{19} = 1 \rightarrow x = +\frac{14}{19}$

کرامر ۱,۵
$$\begin{cases} 3x+4y=2 \\ x-5y=1 \end{cases}$$
$x = \frac{\begin{vmatrix} 2 & 4 \\ 1 & -5 \end{vmatrix}}{\begin{vmatrix} 3 & 4 \\ 1 & -5 \end{vmatrix}} = \frac{-10-4}{-15-4} = +\frac{14}{19}$

$y = \frac{\begin{vmatrix} 3 & 2 \\ 1 & 1 \end{vmatrix}}{\begin{vmatrix} 3 & 4 \\ 1 & -5 \end{vmatrix}} = \frac{3-2}{-15-4} = \frac{-1}{19}$

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