

Subject:

Year:

Month:

Day:

14/05/2021

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دینا سادات رفیعی

1 $A(-2, k)$ $B(2, m)$ $m_{AB} = \frac{\Delta y}{\Delta x} = \frac{m-k}{4} = -\frac{1}{4} \Rightarrow m-k = -1$ (1)

2 $E(0, 1)$ $F(2, 1)$ $E(0, 1)$ $F(2, 1)$ $EF \parallel AB \Rightarrow \sqrt{\Delta x^2 + \Delta y^2} = \sqrt{(2-0)^2 + (1-1)^2} = \sqrt{4} = 2$

3 $EF \parallel AB \Rightarrow \sqrt{\Delta x^2 + \Delta y^2} = \sqrt{(2-0)^2 + (1-1)^2} = \sqrt{4} = 2$

4

5 $A(-1, 2)$ $B(1, 1)$ $C(2, 1)$ $D(0, 0)$ $AC \parallel BD \Rightarrow m_{AC} = m_{BD} \Rightarrow \frac{1-2}{1-(-1)} = \frac{1-0}{0-0}$

6 $BC \parallel AD \Rightarrow m_{BC} = m_{AD} \Rightarrow \frac{1-1}{1-2} = \frac{1-0}{0-(-1)}$

7 $AB \perp CD \Rightarrow m_{AB} \cdot m_{CD} = -1 \Rightarrow \frac{1-2}{1-(-1)} \cdot \frac{1-0}{0-(-1)} = -1$

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9 $AB \perp CD \Rightarrow m_{AB} \cdot m_{CD} = -1 \Rightarrow \frac{1-2}{1-(-1)} \cdot \frac{1-0}{0-(-1)} = -1$

10

11 $m_1 + (m^2 - 1)y = 3 \Rightarrow y = \frac{3 - (m^2 - 1)y}{m^2 - 1} \Rightarrow y = \frac{3}{m^2 - 1}$

12 $m_1 = \tan \theta = \frac{1}{\sqrt{3}} \Rightarrow \sqrt{3} = \frac{1}{m_1} \Rightarrow m_1 = \frac{1}{\sqrt{3}}$

13 $m_1 + m_2 = 0 \Rightarrow m_2 = -m_1 = -\frac{1}{\sqrt{3}}$

14

15 $A(1, 4)$ $B(2, 1)$ $C(3, 1)$ $D(4, 1)$ $E(5, 1)$ $F(6, 1)$ $G(7, 1)$ $H(8, 1)$ $I(9, 1)$ $J(10, 1)$ $K(11, 1)$ $L(12, 1)$ $M(13, 1)$ $N(14, 1)$ $O(15, 1)$ $P(16, 1)$ $Q(17, 1)$ $R(18, 1)$ $S(19, 1)$ $T(20, 1)$ $U(21, 1)$ $V(22, 1)$ $W(23, 1)$ $X(24, 1)$ $Y(25, 1)$ $Z(26, 1)$

16 $AB \parallel CD \Rightarrow m_{AB} = m_{CD} \Rightarrow \frac{1-4}{2-1} = \frac{1-1}{3-2}$

17 $BC \parallel DE \Rightarrow m_{BC} = m_{DE} \Rightarrow \frac{1-1}{3-2} = \frac{1-1}{4-3}$

18 $AC \parallel BD \Rightarrow m_{AC} = m_{BD} \Rightarrow \frac{1-4}{3-1} = \frac{1-1}{4-2}$

19

20 $AB \parallel CD \Rightarrow m_{AB} = m_{CD} \Rightarrow \frac{1-4}{2-1} = \frac{1-1}{3-2}$

21 $BC \parallel DE \Rightarrow m_{BC} = m_{DE} \Rightarrow \frac{1-1}{3-2} = \frac{1-1}{4-3}$

22 $AC \parallel BD \Rightarrow m_{AC} = m_{BD} \Rightarrow \frac{1-4}{3-1} = \frac{1-1}{4-2}$

23

24

25

26 $d' \perp d \Rightarrow m_{d'} = -\frac{1}{m_d} = -\frac{1}{\frac{1}{\sqrt{3}}} = -\sqrt{3}$

27 $d' \perp d \Rightarrow m_{d'} = -\frac{1}{m_d} = -\frac{1}{\frac{1}{\sqrt{3}}} = -\sqrt{3}$

28 $d' \perp d \Rightarrow m_{d'} = -\frac{1}{m_d} = -\frac{1}{\frac{1}{\sqrt{3}}} = -\sqrt{3}$

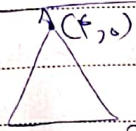
29 $d' \perp d \Rightarrow m_{d'} = -\frac{1}{m_d} = -\frac{1}{\frac{1}{\sqrt{3}}} = -\sqrt{3}$

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TANDIS

(b) $y - ax = 1 \rightarrow y = ax + 1$ } $a = \frac{1}{a} \rightarrow a^2 = 1 \rightarrow a = \pm 1$ (CV)
 $ay - x = a - 1 \rightarrow y = \frac{1}{a}x + \frac{a-1}{a}$ } $a = 1 \rightarrow y = x$ } $a = -1 \rightarrow y = -x + 1$
 $y \leq x \rightarrow y = x$ } $y \leq x + 1$ } $y \leq -x + 1$

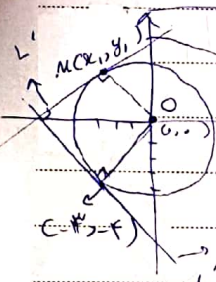
$\text{Area} = \frac{(0)(-1) + (1)(1) + 0}{2} = \frac{1}{2}$
 $(\text{Area})^2 = (\text{Area})^2 \rightarrow \frac{1}{4} + (\text{Area})^2 = \frac{1}{4} \rightarrow (\text{Area})^2 = \frac{1}{4} \rightarrow \text{Area} = \frac{\sqrt{1}}{2}$
 $\text{Area} = \frac{\sqrt{1}}{2} \times \frac{\sqrt{1}}{2} = \frac{1}{4}$



$\frac{(1)(-1) + (-1)(0) + 0}{2} = \frac{-1}{2} = -\frac{1}{2}$ (A)
 $\frac{1}{2}x - \frac{1}{2} = -\frac{1}{2}x + \frac{1}{2} \rightarrow \frac{1}{2}x + \frac{1}{2}x = \frac{1}{2} + \frac{1}{2} \rightarrow x = 1$
 $y = -x + 1 \rightarrow y = -1 + 1 = 0$
 $\frac{1}{2}x - \frac{1}{2} = -\frac{1}{2}x + \frac{1}{2} \rightarrow \frac{1}{2}x + \frac{1}{2}x = \frac{1}{2} + \frac{1}{2} \rightarrow x = 1$
 $y = -x + 1 \rightarrow y = -1 + 1 = 0$

$\begin{vmatrix} 1/2 & 0/2 & 1 \\ 1 & 0 & 1 \\ 1 & 0 & 1 \end{vmatrix} = 1/2 - 0/2 = 1/2$ Area = $\frac{1}{2} \times \frac{1}{2} = \frac{1}{4}$

$(\frac{1}{2}, a) \text{ and } (\frac{1}{2}, b)$ $m = \frac{b-a}{\frac{1}{2}-\frac{1}{2}} = \frac{b-a}{0}$ (9)
 $\text{Area} = \frac{\sqrt{(b-a)^2 + (\frac{1}{2}-\frac{1}{2})^2}}{2} = \frac{\sqrt{b^2 - 2ab + a^2}}{2} = \frac{\sqrt{b^2 - 2ab + a^2}}{2}$



$\text{Area} = \sqrt{(-r)^2 + (r)^2} = \sqrt{2r^2} = r\sqrt{2}$ (10)
 $\sqrt{(x1-0)^2 + (y1-0)^2} = r \rightarrow x1^2 + y1^2 = r^2$
 $m_L = \frac{-1}{m_{OT}} \rightarrow m_{OT} = \frac{y1}{x1} \rightarrow m_L = \frac{-x1}{y1}$
 $L: y = \frac{-x1}{y1}x + b$ OA $\rightarrow y = \frac{y1}{x1}x$
 $L': y = \frac{x1}{y1}x + \frac{r^2}{y1}$
 $L \rightarrow y = \frac{y1}{x1}x + c \rightarrow -\frac{y1}{x1}x + c = \frac{y1}{x1}x \rightarrow c = \frac{2y1^2}{x1}$
 $\frac{y1}{x1}x - \frac{r^2}{y1} = \frac{y1}{x1}x + \frac{r^2}{y1} \rightarrow \frac{2y1^2}{x1} = \frac{2r^2}{y1} \rightarrow y1^3 = r^2 x1$
 $y1 = -1$ } $xy = r^2$