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1) $ABCD$ (مربع) $m = \frac{1}{\sqrt{2}}$ $B(E, m)$ $A(-r, R)$

S $S?$ $-\frac{1}{\sqrt{2}} \leq \frac{m-K}{\sqrt{2}} \leq \frac{m-K}{\sqrt{2}(-r)}$

$m-K \leq -r \rightarrow m \leq K-r \rightarrow AB \leq \sqrt{4r^2 + (-r)^2} = \sqrt{5r^2} = \sqrt{5}r$

$S \leq AB \leq (\sqrt{5}r) \leq \sqrt{5}r$

2) $A(-1, 4)$ $B(2, 1)$ $C(x, y)$ $D(-1-x, y+2)$

P $S?$

مربع C, D (مربع)

$M_A C = (-\frac{1+x}{2}, \frac{4+y}{2})$

$M_{BD} = (\frac{2+(-1-x)}{2}, \frac{1+y+2}{2}) = (\frac{1-x}{2}, \frac{y+3}{2})$

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$-\frac{1+x}{2} = \frac{1-x}{2} \Rightarrow -1+x = 1-x \rightarrow 2x = 2 \Rightarrow x = 1, 0$

$\frac{4+y}{2} = \frac{y+3}{2} \Rightarrow 4+y = y+3 \Rightarrow 4 = 3$

$C.D. = (-4)(1, 0) + (2)(y-1) = 0 \rightarrow 4 + 2y - 2 = 0 \rightarrow 2y + 2 = 0$

$2y = -2 \rightarrow y = -1$

$BC = \sqrt{(1, 0 - 2)^2 + (-1 - 1)^2} = \sqrt{(-1, 0)^2 + (-2)^2} = \sqrt{1 + 4} = \sqrt{5}$

$CD = \sqrt{(-5)^2 + (2)^2} = \sqrt{25 + 4} = \sqrt{29}$

$P = 2(l + w) = 2(5 + \sqrt{29}) = 2 \times 10 = 20$

④

$$m_1 = m_2$$

$$y_0 \leftarrow m, \text{ but } \tan \theta_0 = \sqrt{r}$$

$$m x_4 (m^r - 1) y_5 r$$

$$(m^r - 1) y_5 - r m x_4 r$$

⑤

$$y_5 - \frac{r m}{m^r - 1} x_4 + \frac{r}{m^r - 1} \rightarrow a_5 = \frac{r m}{m^r - 1} \quad a \text{ stank's } \sqrt{r}$$

$$- \frac{r m}{m^r - 1} \sqrt{r} \rightarrow - r m_5 \sqrt{r} (m^r - 1)$$

$$- r m_5 \sqrt{r} m^r - \sqrt{r} \rightarrow \sqrt{r} m^r + r m - \sqrt{r} s_0$$

$$m_5 = \frac{b + \sqrt{b^2 - 4ac}}{2a} \rightarrow m_5 = \frac{r \pm \sqrt{r^2 - 4(r)(-\sqrt{r})}}{2(\sqrt{r})} = \frac{r \pm \sqrt{r^2 + 4r^2}}{2\sqrt{r}} = \frac{r \pm \sqrt{5r^2}}{2\sqrt{r}}$$

$$m_1 = \frac{r + \sqrt{r}}{2\sqrt{r}} = \frac{1}{\sqrt{r}}$$

$$m_2 = \frac{r - \sqrt{r}}{2\sqrt{r}} = \frac{1}{\sqrt{r}}$$

$$\rightarrow |m_1 - m_2| = \left| \frac{1}{\sqrt{r}} - (-\sqrt{r}) \right| = \left| \frac{1 + r}{\sqrt{r}} \right|$$

$$\frac{r}{\sqrt{r}} \times \frac{\sqrt{r}}{\sqrt{r}} = \left(\frac{r\sqrt{r}}{r} \right)$$

⑥

$$A(69)$$

$$B(r, r)$$

$$C(v, 11)$$

$$AH$$

$$m_{BC} = \frac{y_2 - y_1}{x_2 - x_1} = \frac{11 - r}{v - r} = \frac{1}{r} = r$$

⑦

$$E = |E| = |19 - 14| = (2 \times 11 - 4 \times 6) = |BA \times BC|$$

$$|BC| = \sqrt{11^2 + 6^2} = \sqrt{121 + 36} = \sqrt{157} = 12.53$$

$$AH = \frac{E}{E\sqrt{157}} = \frac{1}{\sqrt{157}} = \frac{1}{12.53} = 0.0798 \rightarrow AH = r$$

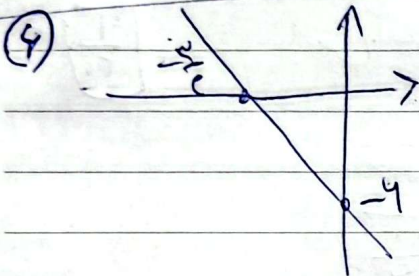
(3) $rx + y = V$

$$\epsilon y - rx = IV$$

$$ry - Vx = IV$$

$$\epsilon y - rx = IV \rightarrow \frac{ax_0 + by_0 + d}{\sqrt{a^2 + b^2}} \rightarrow \frac{|-r(r) + \epsilon(1) \cdot IV|}{\sqrt{\epsilon^2 + r^2}} \rightarrow \frac{|-r^2 + \epsilon IV|}{\sqrt{\epsilon^2 + r^2}}$$

$$\frac{|-r^2 + \epsilon IV|}{\omega} \rightarrow \left(\epsilon, \epsilon, \frac{r}{\omega} \right)$$



$$ms - 4 = 0 \rightarrow s = \frac{4}{m} = \frac{4}{-\frac{r}{\epsilon}} = -\frac{4\epsilon}{r}$$

$$y = -\frac{4\epsilon}{r} (x + \frac{r}{\epsilon}) \rightarrow y = -\frac{4\epsilon}{r} x - 4$$

$$-4x - 4 = y \rightarrow |y| = \frac{4}{r}$$

$$\text{مقدار } y = \frac{4\sqrt{r}}{r}$$

$$B = 0 - (-\frac{r}{\epsilon}) = \frac{r}{\epsilon}$$

$$d = 5\sqrt{r} = \frac{r}{\epsilon} \sqrt{r} \rightarrow d = \frac{r\sqrt{r}}{\epsilon}$$

(5) $y = ax + 1$

$$ay = x + 1$$

$$\text{مقدار } \omega$$

$$\text{نقطه } (1, 2)$$

$$s = ?$$

$$\frac{|k - c'|}{\sqrt{1^2 + (-1)^2}} = \frac{1}{\sqrt{2}} s \omega$$

$$\frac{V}{\sqrt{r}} \sqrt{\frac{\epsilon A}{r}} \sqrt{\frac{1}{r} - r\omega} \sqrt{\omega - d^2} = L + W \rightarrow d^2$$

$$\frac{V}{\sqrt{r}} \times \frac{1}{\sqrt{r}} = \frac{V}{r} \rightarrow A$$

