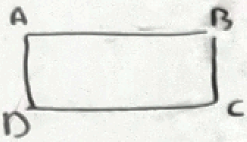
(۱

$\frac{k-m}{-2-4} = \frac{k-m}{-6} = -\frac{1}{2} \rightarrow 2k-2m=6 \rightarrow k-m=3 \rightarrow \sqrt{(k-m)^2+(-6)^2} = \sqrt{9+36} = \sqrt{45}$

$3\sqrt{5} \rightarrow 3\sqrt{5} \times 3\sqrt{5} = 45$

(۲



$\rightarrow -1+x = 3+(-1)-x \rightarrow -1+x = 2-x \rightarrow 2x=3 \rightarrow x=\frac{3}{2}$

$4+y = 1+y+3 \rightarrow y=0 \quad \overline{AB} = \sqrt{16+9} = \sqrt{25} = 5$

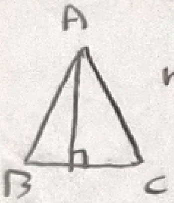
$C = (\frac{3}{2}, 0) \rightarrow \overline{CB} = \sqrt{\frac{9}{4}+4} = \frac{5}{2} \rightarrow 2(\frac{5}{2}+5) = 15$

(۳

$\tan 60^\circ = \sqrt{3} \quad \frac{-2m}{m^2-1} = \sqrt{3} \quad \sqrt{3}m^2 - \sqrt{3} = -2m \rightarrow \sqrt{3}m^2 + 2m - \sqrt{3} = 0$

$\Delta = 4+12 = 16 \rightarrow \frac{-2+4}{2\sqrt{3}} = \frac{2}{2\sqrt{3}} = \frac{1}{\sqrt{3}}, \quad \frac{-2-4}{2\sqrt{3}} = \frac{-6}{2\sqrt{3}} = -\frac{3}{\sqrt{3}} \rightarrow \frac{1}{\sqrt{3}} + \frac{3}{\sqrt{3}} = \frac{4}{\sqrt{3}} = \boxed{\frac{4\sqrt{3}}{3}}$

(۴



$m_{BC} = \frac{3-11}{3-7} = \frac{-8}{-4} = 2 \rightarrow y-3 = 2(x-3) \rightarrow y = 2x-3 \rightarrow y-2x+3=0$

$2x-6$

$d = \frac{|-2+9+3|}{\sqrt{1+4}} = \frac{10}{\sqrt{5}} = \boxed{2\sqrt{5}}$

(۵

$y + 2x = 7$

$4y - 3x = 17$

$y + 2x = 7 \rightarrow 2y + 4x = 14$

$-2y + 7x = +19$

$11x = 33 \rightarrow x = 3 \rightarrow y = 1 \rightarrow B = (3, 1)$

$d = \frac{|4-9-17|}{\sqrt{9+16}} = \boxed{\frac{22}{5}}$

۶)

$A=(0,-4)$
$B=(-\frac{3}{4},0)$ $\rightarrow$ $\frac{0+4}{-\frac{3}{4}-0}=\frac{4}{-\frac{3}{4}}\cdot -\frac{24}{3}=-8$

$y+4=-8(x) \rightarrow y=-8x-4 \xrightarrow{-x} -x=+8x-4-y \rightarrow 9x-y=4 \rightarrow x=\frac{2}{3}$

فاصله: $\frac{2\sqrt{2}}{3}$ $\quad y+8x+4=0$

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۷)

$\frac{+1}{+a}=\frac{a}{1}\neq\frac{a-1}{1} \rightarrow a^2=1 \rightarrow a=\pm1 \xrightarrow{a=1} y-x=1 \rightarrow 2-1=1$ ✓

$y-x=0$

$d=\frac{|-1+2|}{\sqrt{2}}=\frac{1}{\sqrt{2}} \rightarrow \frac{\sqrt{2}}{2} \rightarrow 25-\frac{2}{4}=24\frac{1}{2}=\frac{49}{2} \rightarrow$ طول $=\frac{7}{\sqrt{2}}$

سطح $\frac{\sqrt{2}}{2}\times\frac{7}{\sqrt{2}}=\boxed{3,5}$

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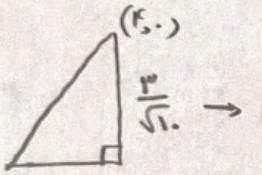
۸)



$\rightarrow d=\frac{|4-1|}{\sqrt{10}}=\frac{3}{\sqrt{10}}$ $\quad x=\sqrt{9-\frac{9}{10}}=\sqrt{\frac{81}{10}}=\frac{9}{\sqrt{10}} \rightarrow S=\frac{1}{2}\times\frac{3}{\sqrt{10}}\times\frac{9}{\sqrt{10}}=\frac{27}{20}=\boxed{1,25}$

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۹)

$\frac{a-b}{-\frac{1}{2}+\frac{1}{3}}=\sqrt{3} \rightarrow \frac{a-b}{-\frac{1}{6}}=\sqrt{3} \quad -6(a-b)=\sqrt{3} \rightarrow (a-b)=\frac{\sqrt{3}}{-6}$

$\sqrt{\frac{3}{36}+\frac{1}{36}}, \sqrt{\frac{4}{36}}, \frac{2}{6}=\frac{1}{3}$ $\rightarrow$ قطر $\frac{\sqrt{2}}{3}$

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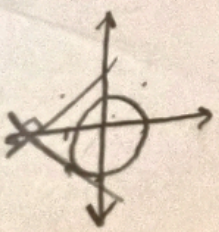
۱۰)



$\frac{-4}{-3}, \frac{4}{3} \rightarrow m_{\perp}=-\frac{3}{4} \rightarrow y+3=-\frac{3}{4}(x+3)$

$y=-\frac{3}{4}x-\frac{25}{4} \rightarrow 4y=-3x-25$

شهرزاد شوشتری

$m_{عمود} = \frac{۴}{۳} \rightarrow -۴x + ۳y + c = ۰ \rightarrow d = \frac{|c|}{۵} = ۵ \rightarrow |c| = ۲۵ \rightarrow$

تا مبدا $\rightarrow c = ۲۵ \rightarrow$

$$\begin{cases} +۳y - ۴x = -۲۵ \\ ۴y + ۳x = +۲۵ \end{cases}$$

$x = -\frac{۱۷۵}{۲۵} = -۷ \quad y = \frac{-۲۵}{۲۵} = -۱$

$\boxed{(-۷, -۱)} \rightarrow -۷x - ۱ = ۷$