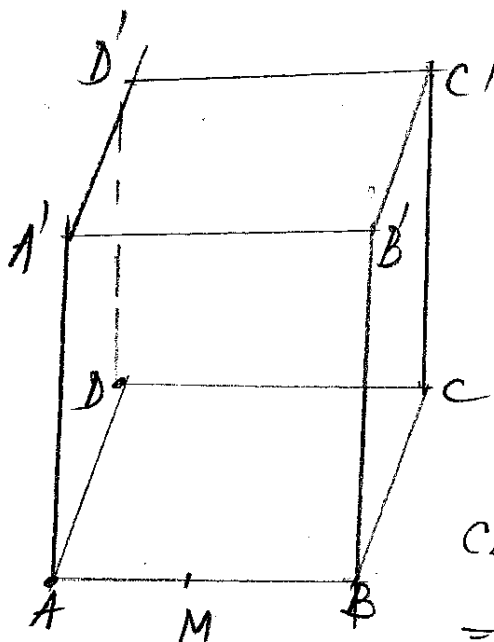


Lecția 4: cubul, paralelipipedul dreptunghic

7/121 $12l = 120 \text{ cm} \Rightarrow l = \frac{120 \text{ cm}}{12} = 10 \text{ cm} \Rightarrow A_{ABCD} = l^2 = 100 \text{ cm}^2 \square$

10/122 $4 \cdot 6 + 8 \cdot 4 = 24 + 32 = 56 \text{ cm}$.

11/122



$ABCD A'B'C'D'$ cub

$CM = 2\sqrt{5}$

$\triangle CBM$ dreptunghic în B

$\Rightarrow CM^2 = CB^2 + BM^2$
 $= CB^2 + \left(\frac{AB}{2}\right)^2$

$CB = AB = l$

$\Rightarrow CM^2 = l^2 + \left(\frac{l}{2}\right)^2$

$\Rightarrow CM^2 = l^2 + \frac{l^2}{4} \Rightarrow CM^2 = \frac{5l^2}{4} \Rightarrow (2\sqrt{5})^2 = \frac{5l^2}{4}$

$\Rightarrow 20 = \frac{5l^2}{4} \Rightarrow 5l^2 = 80 \Rightarrow l^2 = 16 \Rightarrow l = 4 \text{ cm}$.

$Y = 12 \cdot l = 12 \cdot 4 = 48 \text{ cm} \square$

12/122. $AC = 40 \text{ cm}$, $AB' = 2\sqrt{337}$, $AD' = 30 \text{ cm}$

$AC^2 = AB^2 + BC^2$

$AB'^2 = AB^2 + BB'^2$

$AD'^2 = AD^2 + DD'^2$

$BB' = DD' = h$

$AD = BC = l$

$AB = l$

$\begin{cases} 1600 = l^2 + l^2 & (1) \\ 1348 = l^2 + h^2 & (2) \\ 900 = l^2 + h^2 & (3) \end{cases}$

$(1) - (2): 252 = l^2 - h^2$
 $900 = l^2 + h^2$
 $\Rightarrow 900 + 252 = 2l^2$
 $1152 = 2l^2 \Rightarrow l^2 = 576$
 $l = 24$

$$l = 24 \text{ cm} \Rightarrow AD = 24 \text{ cm}$$

$$L^2 = 1600 - 576 = 1024 \Rightarrow L = \sqrt{1024} = 32 \text{ cm} \Rightarrow AB = 32 \text{ cm}$$

$$h^2 = 1328 - 1024 = 324 \Rightarrow h = 18 \text{ cm} \Rightarrow DD' = 18 \text{ cm} \cdot \square.$$

$$13/122 \cdot 12 + 4\sqrt{3} + 4\sqrt{15} = 4 \cdot (a + b + c)$$

$$\Rightarrow a + b + c = 3 + \sqrt{3} + \sqrt{15} \quad ; \quad a = 3, b = \sqrt{3}, c = \sqrt{15}$$

$$\frac{a^2 + b^2}{2} = \frac{b^2 + c^2}{3} = \frac{a^2 + c^2}{4}$$

15/122 $\triangle ABD'$ equilateral

$$AB' = \sqrt{a^2 + c^2}$$

$$BD' = \sqrt{a^2 + b^2}$$

$$AD' = \sqrt{b^2 + c^2}$$

$$\Rightarrow \sqrt{a^2 + c^2} = \sqrt{a^2 + b^2} = \sqrt{b^2 + c^2}$$

$$\Leftrightarrow a^2 + c^2 = a^2 + b^2 = b^2 + c^2$$

$$\Downarrow \quad \Rightarrow a^2 = c^2$$

$$b = c$$

$$\Rightarrow a^2 = b^2 = c^2 \quad (a, b, c \text{ lungimi})$$

$$\Rightarrow a = b = c$$