Mind Generation SRL
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III 1) Fie ABCD tetraedru, a.î. ΔABC - dreptunghic, cu $\hat{B} = 90^\circ$ și $AB \equiv BC$. ΔADC - dreptunghic, cu $\hat{D} = 90^\circ$ și $AD \equiv DC$ iar ΔBCD este echilateral, cu $BD = 8$ cm.

a) Dacă M - mijl. [AC] dem. că $(BMD) \perp (ADC)$ și $(BMD) \perp (ABC)$

b) natura ΔBMD și calculați aria sa

c) $(ABC) \perp (ADC)$.

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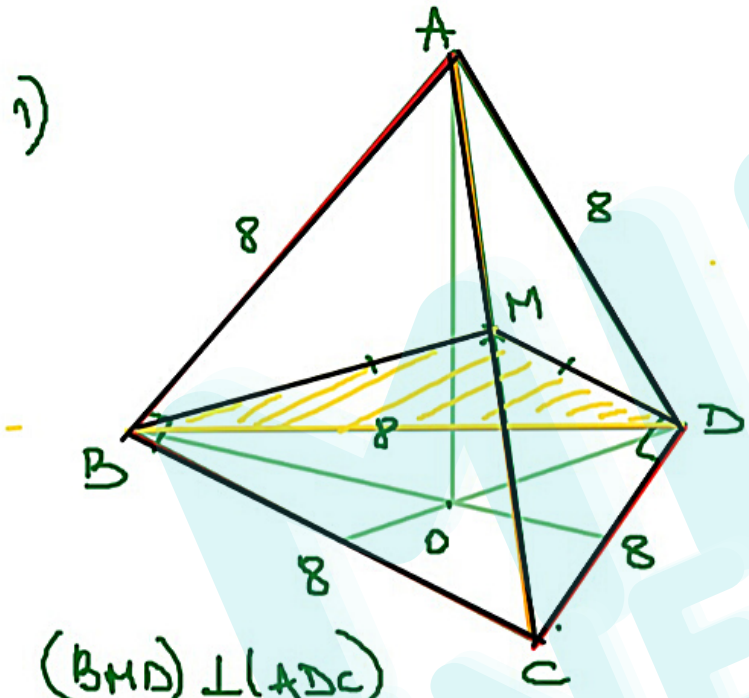

1)

$(BMD) \perp (ADC)$

$BM = \frac{AC}{2} = \frac{8\sqrt{2}}{2} = 4\sqrt{2}$ cm

$DM = 4\sqrt{2}$ cm

ΔBMD RTP $\Rightarrow \Delta BMD$ - dr

b) ΔBMD - dr. in $\Rightarrow$

$\Rightarrow A_{\Delta BMD} = \frac{BM \cdot M2}{2} = \frac{4\sqrt{2} \cdot 4\sqrt{2}}{2} = 16\ cm^2$.

c) $(ABC) \perp (ADC)$?

$BM \perp AC$

$MD \perp AC$

$(ABC) \cap (ADC) = AC$

$\Rightarrow (ABC) \perp (ADC)$

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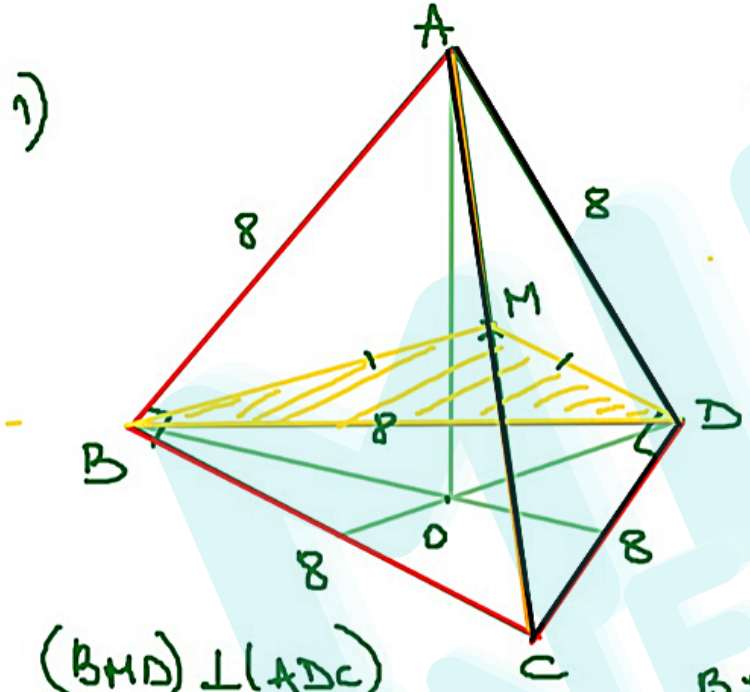

1)

a) ΔBCD echilat $\Rightarrow AB=BC=CD=BD=AD=8$ cm.

ΔABC: dr. isoscel $\left.\begin{matrix} \\ M\text{-mij } AC \end{matrix}\right\} \Rightarrow$ AC din T.P.

BM — mediană $\Rightarrow$

$\Rightarrow BM \perp AC \Rightarrow \boxed{AC \perp BM}$

$AC = 8\sqrt{2}$ cm.

- analog $\Rightarrow DM \perp AC \Rightarrow \boxed{AC \perp DM}$

$MD = 8\sqrt{2}$ cm.

$BM \cap MD = \{M\}$

$\left.\begin{matrix} BM \perp AC \\ AC, MD \subset (ADC) \end{matrix}\right\} \Rightarrow \boxed{(BMD) \perp (ADC)}$

$\boxed{BM \perp MD}$

$(BMD) \perp (ADC)$

$BM = \frac{AC}{2} = \frac{8\sqrt{2}}{2} = 4\sqrt{2}$ cm

$DM = 4\sqrt{2}$ cm

ΔBMD RTP $\Rightarrow \Delta BMD$ - dr

Analog: $(BMD) \perp (ABC)$