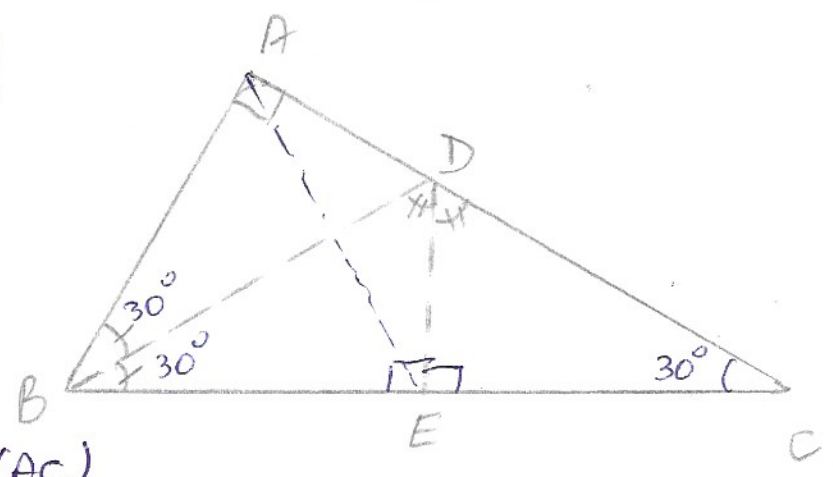


PROBLEME RECAPITULATIVE

TESTUL 2 / 178 cel



2. Ip:

$\Delta ABC$  - drept.

$m(\hat{A}) = 90^\circ$

$BC = 2 \cdot AB$

$[BD]$  - bis.  $\angle ABC$ ,  $DE \perp AC$

$[DE]$  - bis  $\angle BDC$ ,  $EE(BC)$

Cl. a)  $\Delta DAB \equiv \Delta DEB \equiv \Delta DEC$

b)  $\Delta ABE$  - echi.

Dem:

$\left. \begin{array}{l} \text{Din } \Delta ABC \text{ - dr.} \\ BC = 2 \cdot AB \end{array} \right\} \Rightarrow \text{RT } 30-60-90 \Rightarrow m(\hat{C}) = 30^\circ \Rightarrow m(\hat{B}) = 60^\circ \left. \begin{array}{l} \\ [BD] \text{ - bis } \angle B \end{array} \right\} \Rightarrow$

$\Rightarrow m(\angle ABD) = m(\angle DBC) = \frac{60^\circ}{2} = 30^\circ$

$\Rightarrow \Delta DBE$  - is.  $\left. \begin{array}{l} [DE] = \text{bis} \end{array} \right\} \Rightarrow DE = \text{in } \Delta DBE \Rightarrow DE \perp BC$

$\left. \begin{array}{l} \text{Fie } \Delta DAB, \Delta DEB, \Delta DEC \text{ - dr.} \\ \text{Din } [BD] \equiv [BD] \text{ - l.c.} \\ \angle ABD \equiv \angle EBD \end{array} \right\} \begin{array}{l} \text{i.u.} \\ \Rightarrow \Delta DAB \equiv \Delta DEB \end{array}$

$\left. \begin{array}{l} \text{Fie } \Delta DEB, \Delta DEC \text{ - dr.} \\ \text{Din } [DE] \equiv [DE] \text{ - l.c.} \\ \angle BDE \equiv \angle CDE \end{array} \right\} \begin{array}{l} \text{c.c.v.} \\ \Rightarrow \Delta DEB \equiv \Delta DEC \end{array} \Rightarrow \Delta DAB \equiv \Delta DEB \equiv \Delta DEC$

$\text{Din } \triangle DAB \equiv \triangle DEB \Rightarrow [AB] = [BE] \Rightarrow \triangle ABE - \text{is.}$   
 $m(\hat{B}) = 60^\circ \Rightarrow$

$\Rightarrow \triangle ABE - \text{echi}$

IV / 180.

yp:

$\triangle ABC$

$D \in \text{Int}(\triangle ABC)$

$[AD] = [BC]$

$\angle ABC, \angle ADC = \text{suplem.}$

$E \in AB$  a.i.  $B \in (AE)$

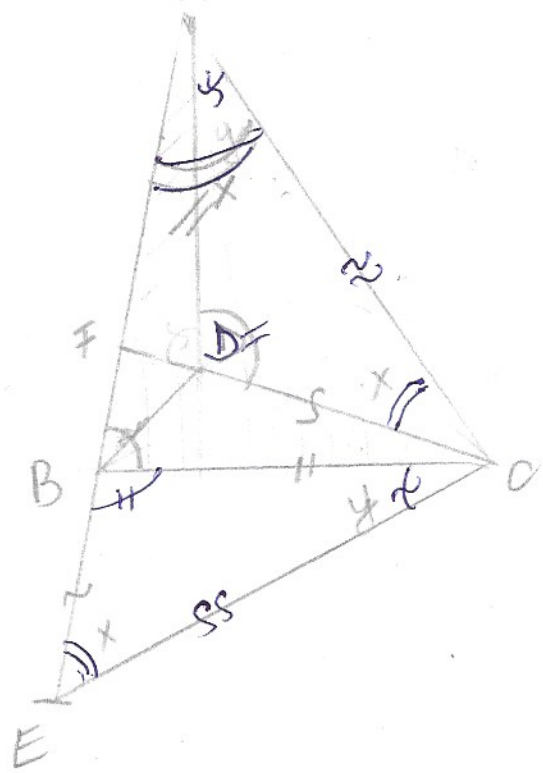
$[BE] = [CD]$

cl: a)  $\triangle ABC \equiv \triangle CBE$

b) matura  $\triangle AEC$

c)  $CD \cap AB = \{F\} \Rightarrow [AF] = [CF]$

d)  $m(\angle ABC) = 40^\circ \Rightarrow m(\hat{ADE}) = ?$



Dem:

$\text{Din } \angle ABC, \angle ADC - \text{suplem.} \Rightarrow m(\hat{ADC}) + m(\hat{ABC}) = 180^\circ$   
 $\text{Dar } m(\hat{EBC}) + m(\hat{ABC}) = 180^\circ \Rightarrow$

$\Rightarrow \angle ABC \equiv \angle EBC$   
 $[AD] = [BC]$   
 $[DC] = [BE]$

$\xrightarrow{\text{I.U.L.}} \triangle ADC \equiv \triangle CBE \Rightarrow \angle BEC = \angle DCE = x$   
 $\angle BCE = \angle DAC = y$

$\Downarrow$   
 $[EC] = [AC] \Rightarrow \triangle AEC - \text{is.}$

$\Rightarrow m(\hat{CAE}) = m(\hat{CEA}) = x$

In  $\triangle AFC, m(\hat{FAC}) = m(\hat{FCE}) = x \Rightarrow \triangle AFC - \text{is.} \Rightarrow AF = FC$

d)  $m(\hat{ABC}) = 40^\circ \Rightarrow m(\hat{ADC}) = 180^\circ - 40^\circ = 140^\circ$

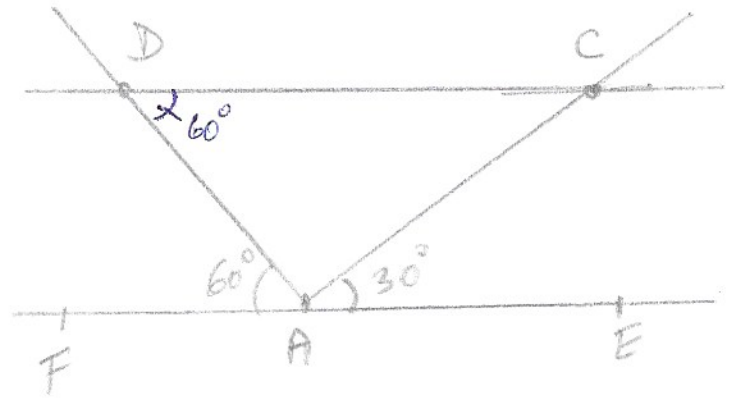
$\sqrt{180}$ .

Ip:

$EF \parallel CD$

$m(\widehat{CAE}) = 30^\circ$

$m(\widehat{DAF}) = 2 \cdot m(\widehat{CAE})$



Cl: a)  $m(\widehat{DAF}) = ?$

b)  $m(\angle \triangle ABC) = ?$

Dem:

a)  $m(\widehat{DAF}) = 2 \cdot m(\widehat{CAE}) = 2 \cdot 30^\circ = 60^\circ$

b)  $\left. \begin{array}{l} \text{Dem } DC \parallel FE \\ AD - \text{secantă} \end{array} \right\} \Rightarrow m(\widehat{DAF}) = m(\widehat{ADC}) = 60^\circ \text{ (alte interne)}$

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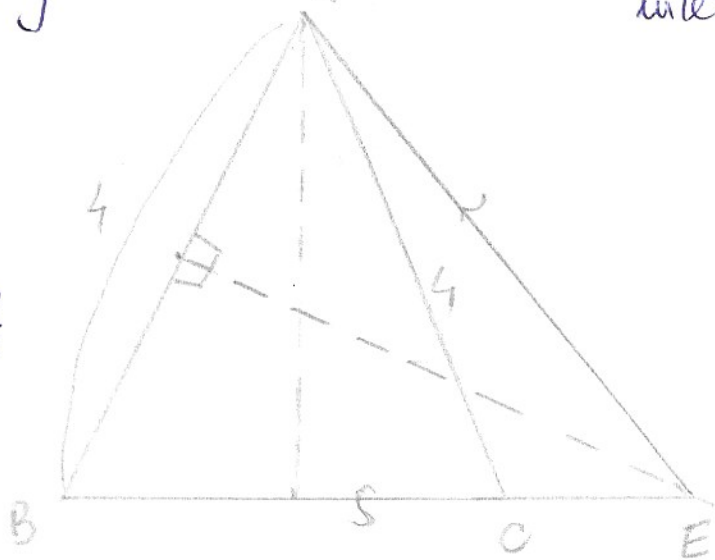
Ip:  $\triangle ABC - \text{id.}$

$AB = AC = 4 \text{ cm}$

$\text{mediat.}(AB) \cap BC = \{E\}$

$P_{\triangle ABE} = 14 \text{ cm}$

Cl:  $BE = ?$



Dem:

$\text{Din } E \in \text{mediat.}(AB) \xrightarrow[\text{mediat}]{\text{prop.}}$   $EA = EB = \frac{P_{\triangle ABE} - AB}{2}$

$= \frac{14 - 4}{2} = \frac{10}{2} = 5 \text{ cm.}$

TEMA

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