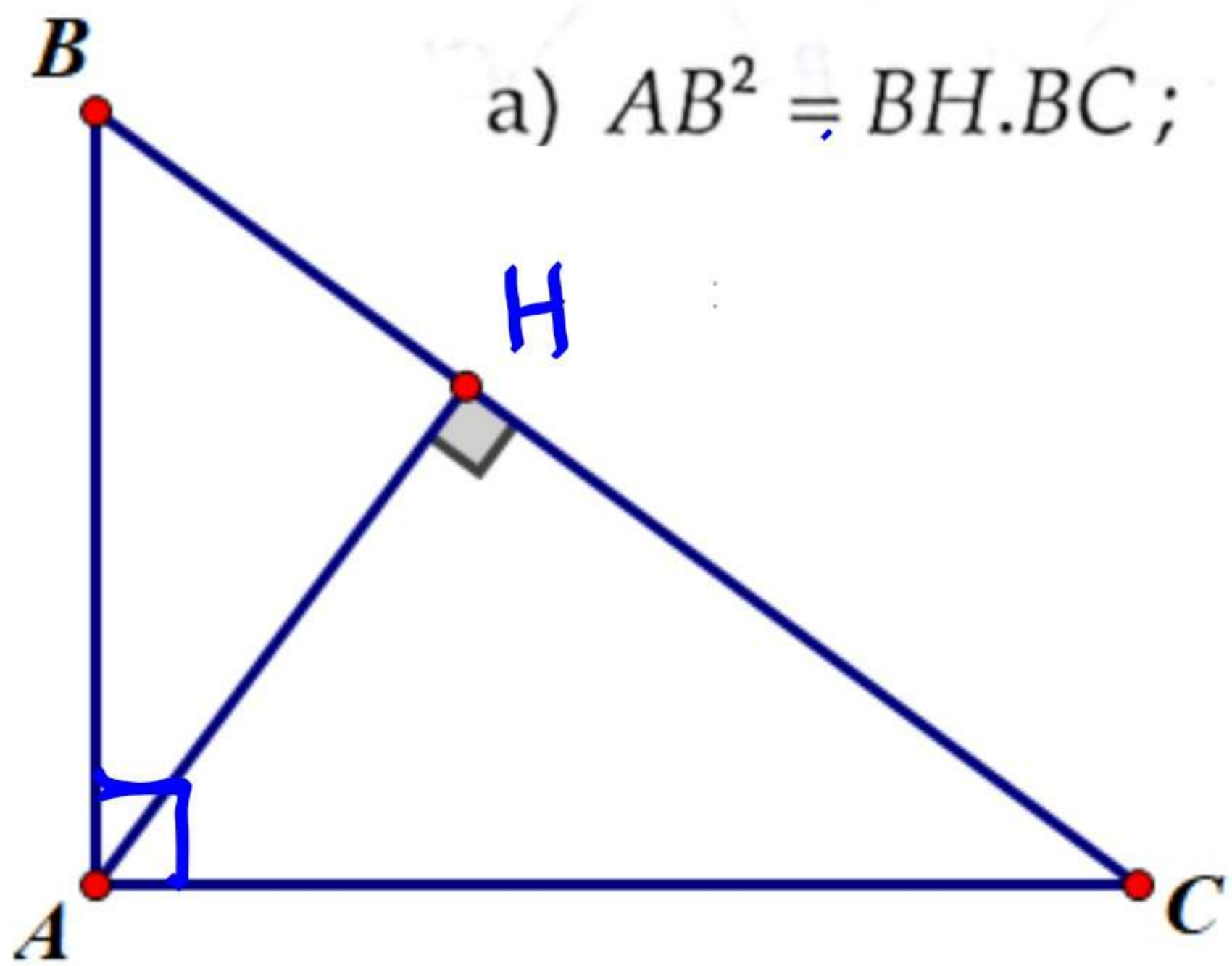


Bài 3A. 3A. Cho tam giác ABC vuông tại A, đường cao AH. Chứng minh:

a) $AB^2 = BH \cdot BC$;

b) $AH^2 = BH \cdot HC$.



gt | $\Delta ABC, \hat{A} = 90^\circ$
 $AH \perp BC$

a) $AB^2 = BH \cdot BC$
b) $AH^2 = BH \cdot HC$

a) \textcircled{ABH} ~~ACH~~ ^{CM.} ABC

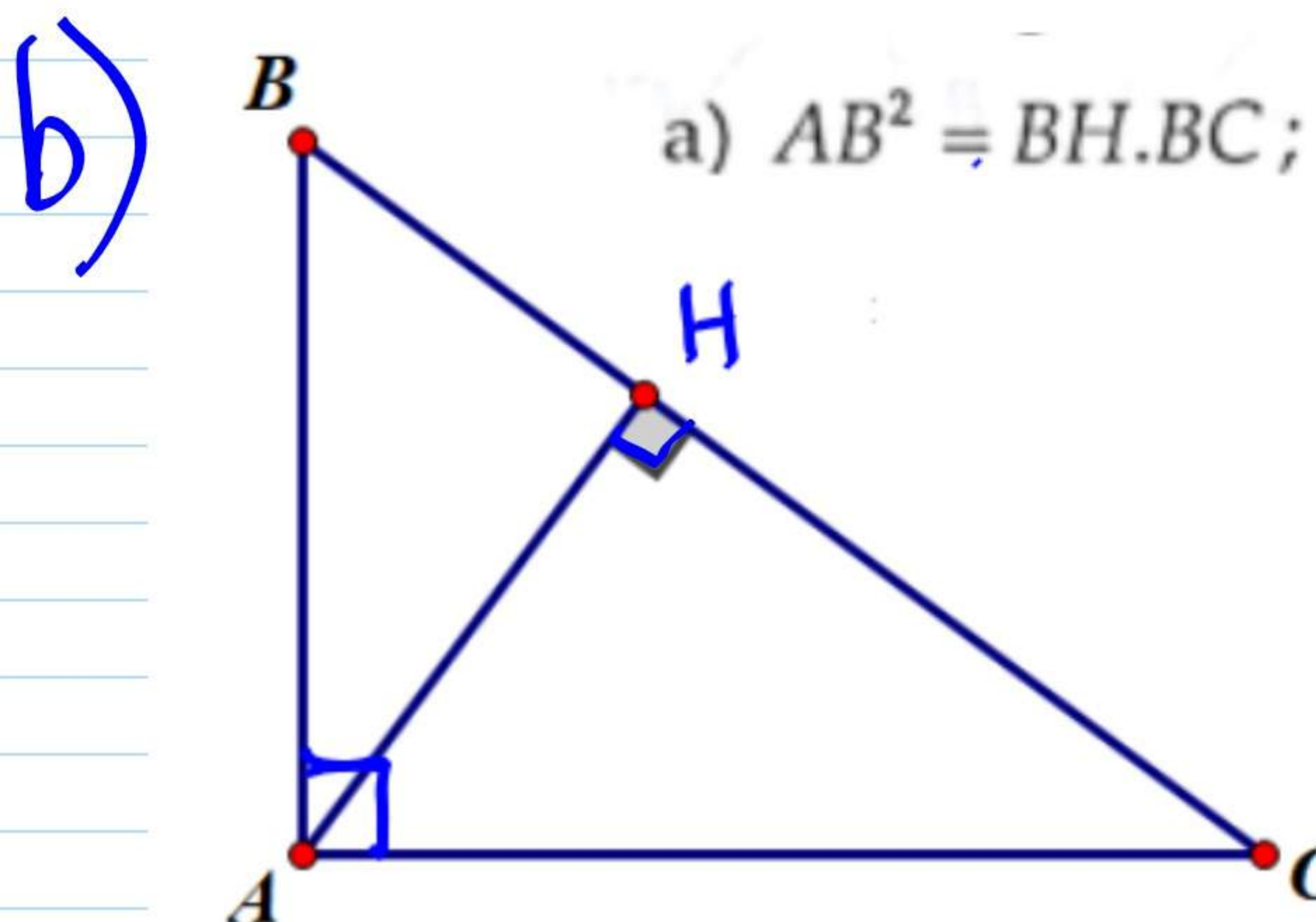
CM $\Delta ABC \sim \Delta HBA$

ta có $\begin{cases} \hat{BAC} = \hat{BHA} = 90^\circ \\ \hat{ABC} = \hat{ABH} \text{ (góc B chung)} \end{cases}$



$\Rightarrow \Delta ABC \sim \Delta HBA$

$\Rightarrow \frac{AB}{HB} = \frac{BC}{BA} \Rightarrow AB^2 = HB \cdot BC$ (đpcm)



Cần CM: $\Delta ABC \sim \Delta HAC$?

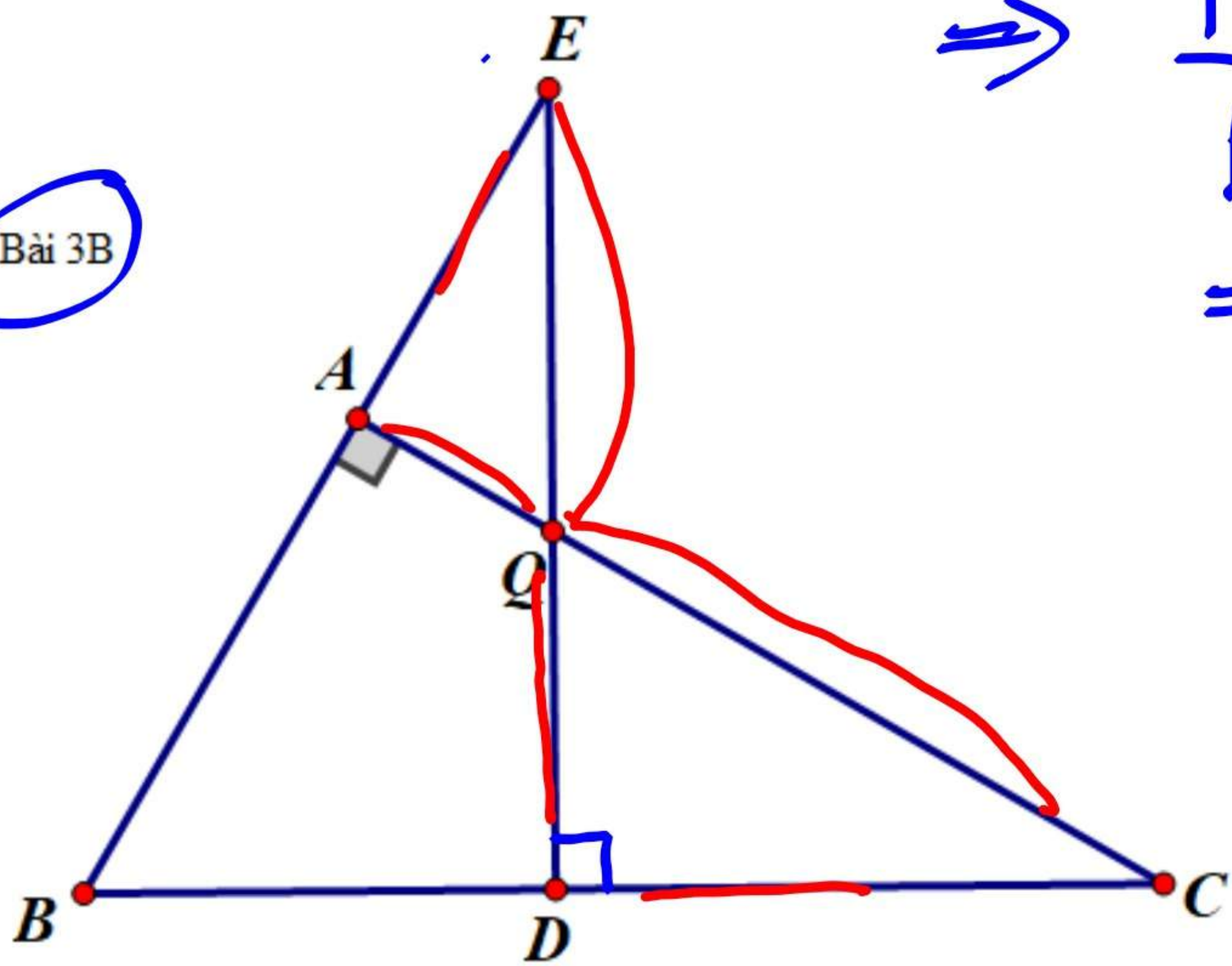
ta có $\begin{cases} \text{góc } \hat{C} \text{ chung} \\ \hat{AHC} = \hat{BAC} = 90^\circ \end{cases}$

$\Rightarrow \Delta ABC \sim \Delta HAC$ (1)

Bởi a) $\Delta ABC \sim \Delta HBA$ (2)

Bởi (1) & (2) $\Delta HAC \sim \Delta HBA$

Bài 3B



$$\Rightarrow \frac{HA}{HB} = \frac{HC}{HA}$$

$$\Rightarrow AH^2 = HB \cdot HC$$



gt $\Delta ABC, \hat{A} = 90^\circ$

$Q \in AC$

$QD \perp BC$

AB cắt QD tại E

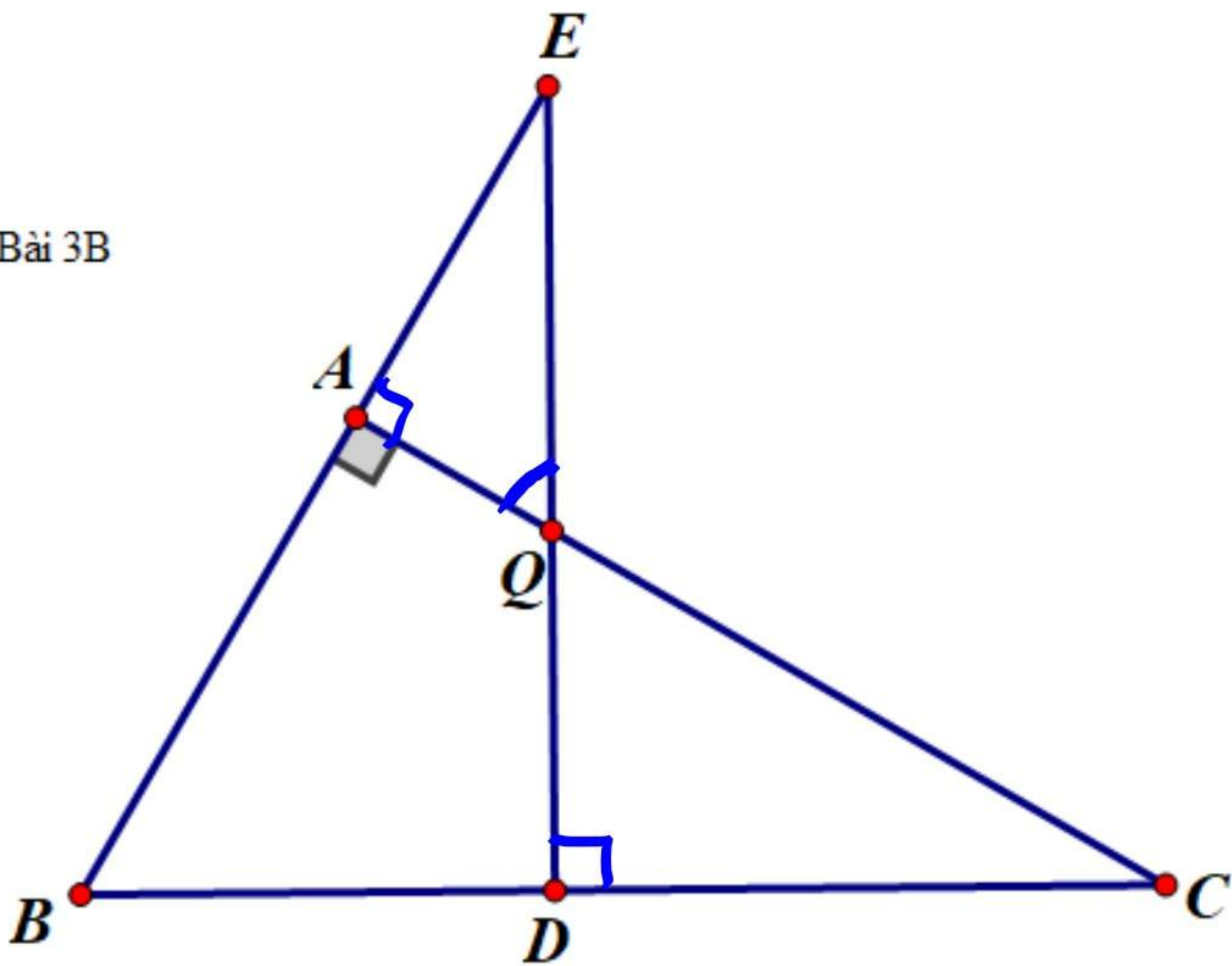
a) $QA \cdot QC = QD \cdot QE$

b) $AB \cdot AE = AQ \cdot AC$

CM.

a) Cần CM $\Delta QDC \sim \Delta QAE$.

Bài 3B



Có $\begin{cases} \widehat{DQC} = \widehat{EQA} \text{ (đối đỉnh)} \\ \widehat{EAQ} = \widehat{CDQ} = 90^\circ \end{cases}$

$\Rightarrow \Delta QDC \sim \Delta QAE$

$$\Rightarrow \frac{QD}{QA} = \frac{QC}{QE}$$

$$\Rightarrow QD \cdot QE = QA \cdot QC \text{ (đpcm)}$$

b) \Leftrightarrow Cần CM $\Delta ABC \sim \Delta AQE$

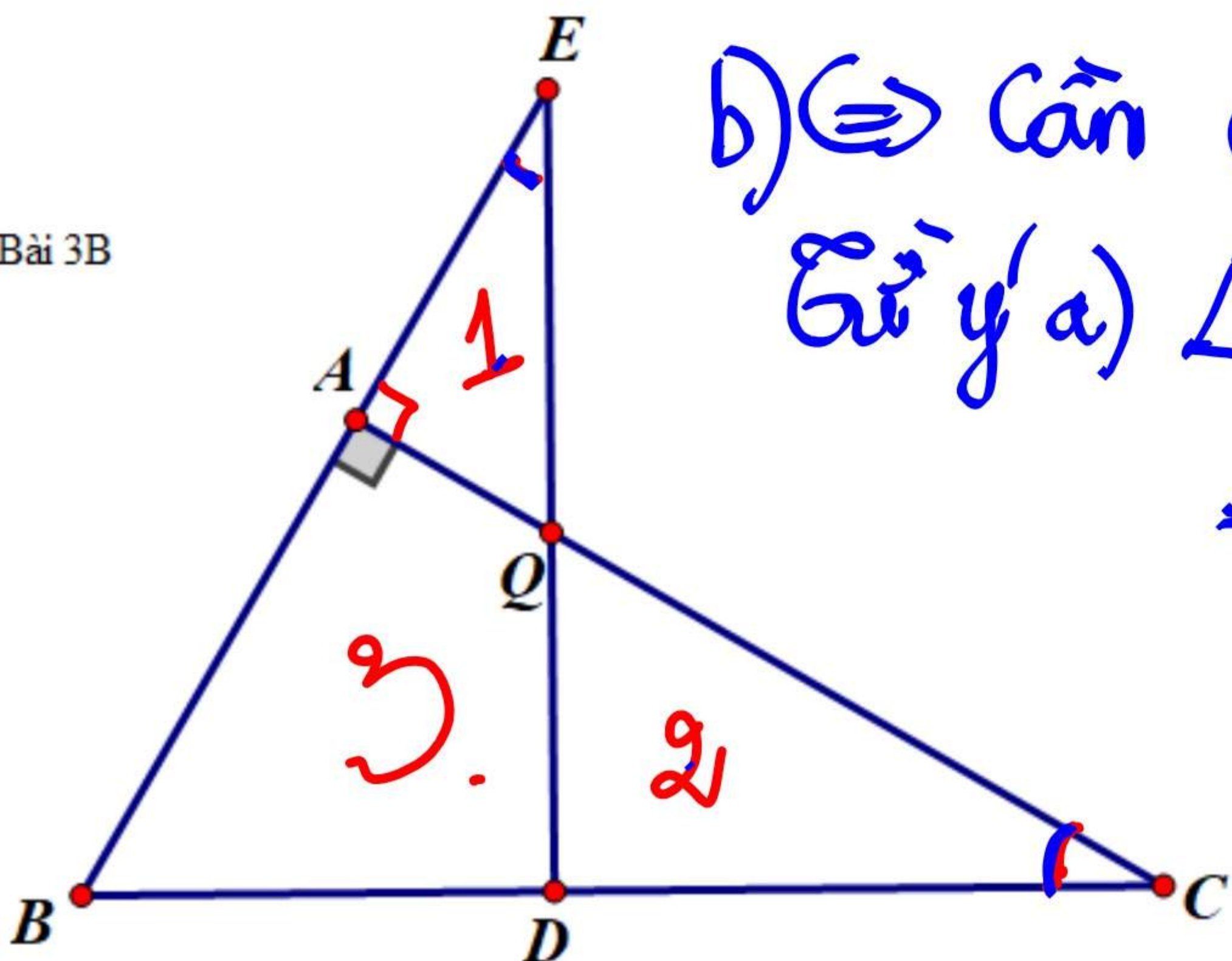
Sử dụng a) $\Delta QDC \sim \Delta QAE$

$$\Rightarrow \widehat{AEQ} = \widehat{DCQ} \text{ (1)}$$

$$\widehat{BAC} = \widehat{QAE} = 90^\circ \text{ (2)}$$

Sử dụng (1) & (2) $\Rightarrow \Delta ABC \sim \Delta AQE$

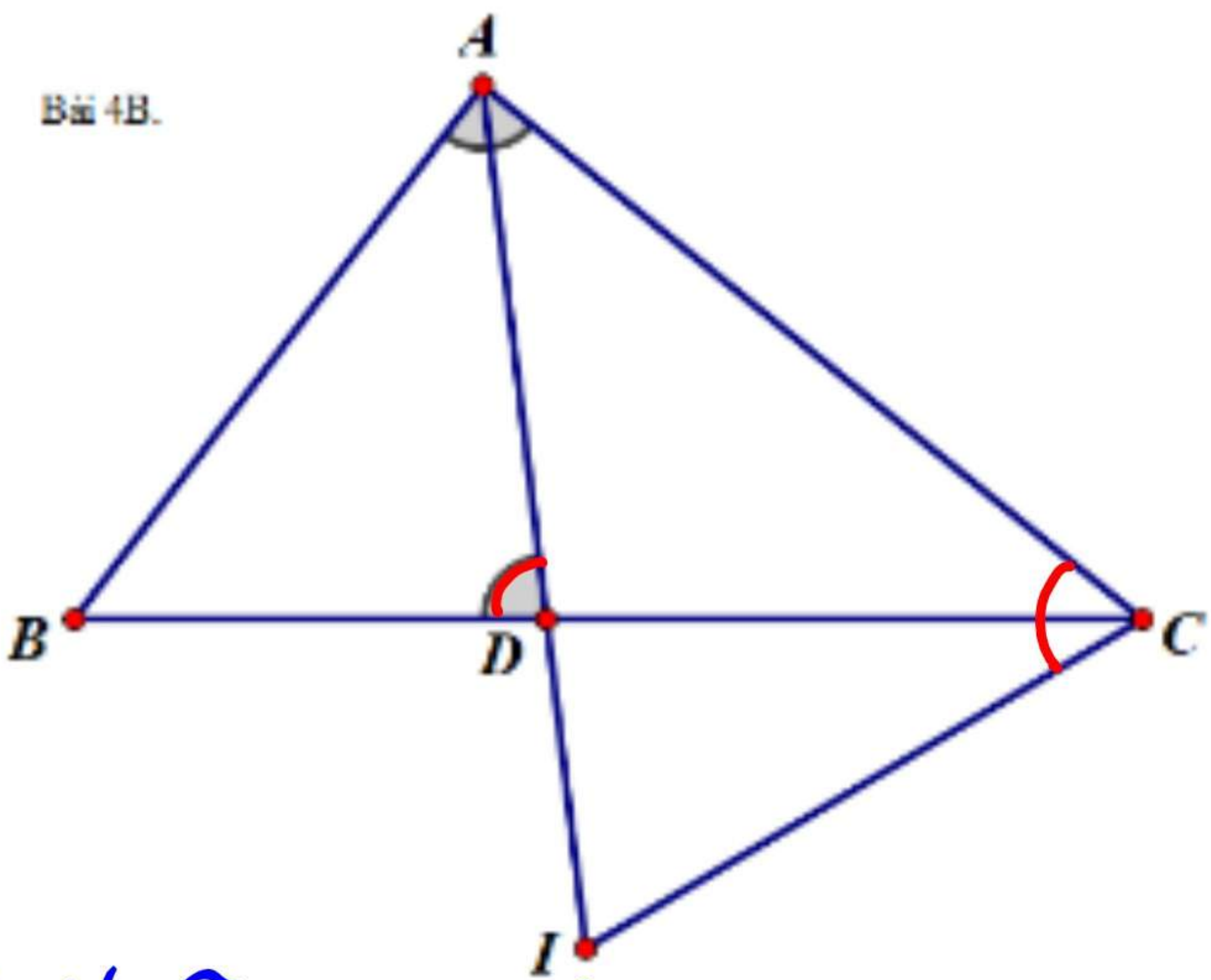
Bài 3B



$$\Rightarrow \frac{AB}{AQ} = \frac{AC}{AE}$$

$$\Rightarrow AB \cdot AE = AQ \cdot AC \text{ (đpcm)}$$

Bài 4B.



gt $\triangle ABC, AB < AC$
 $\widehat{BAD} = \widehat{DAC}$

$I \in AD$
 $\widehat{ACI} = \widehat{ADB}$

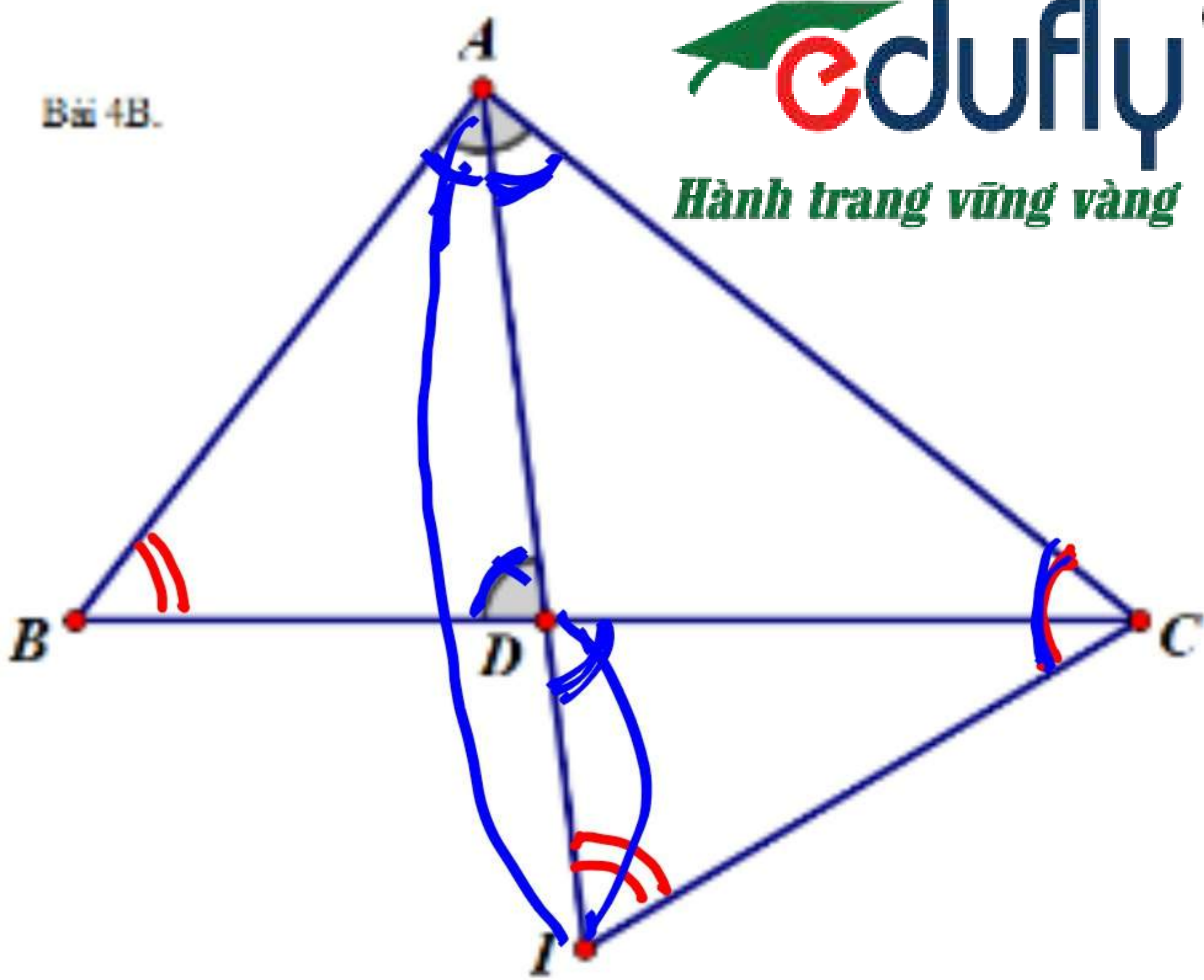
B. Hân + T. My
 Dũng + G. Hân

\leftarrow CM a) $\triangle ABD \sim \triangle AIC$

\leftarrow b) $\triangle ABD \sim \triangle CID$

c) $AD^2 = AB \cdot AC = DB \cdot DC$

Bài 4B.



a) $\triangle ABD \sim \triangle AIC$

ta có $\widehat{BAD} = \widehat{IAC}$ (1)

(AD là đg phân giác)

$\widehat{ADB} = \widehat{AIC}$ (gthiết) (2)

Từ (1) & (2) $\Rightarrow \triangle ABD \sim \triangle AIC$

b) $\triangle ABD \sim \triangle CID$

ta có $\widehat{ADB} = \widehat{CDI}$ (đối đỉnh) (3)

$\widehat{ABD} = \widehat{DIC}$ ($\triangle ABD \sim \triangle AIC$) (4)

Từ (3) & (4) $\Rightarrow \triangle ABD \sim \triangle CID$

c) Giả sử a) $\triangle ABD \sim \triangle AIC$

$$\frac{AD}{AC} = \frac{AB}{AI} \Rightarrow AD \cdot AI = AB \cdot AC \quad (*)$$

Giả sử b) $\triangle ABD \sim \triangle CID$

$$\Rightarrow \frac{AD}{CD} = \frac{BD}{ID} \Rightarrow AD \cdot ID = BD \cdot CD \quad (**)$$

(*) - (**)



$$AD \cdot AI - AD \cdot ID = AB \cdot AC - BD \cdot CD$$

$$AD \cdot (AI - ID) = AB \cdot AC - BD \cdot CD$$

$$AD \cdot AD = AB \cdot AC - BD \cdot CD$$

(đpcm)

BTVN: 4A; 6; 7