G-SRT Pythagorean Theorem

Task

Below is a picture of a right triangle $ABC$ with right angle $C$ along with the point $D$ so that $\overrightarrow{CD}$ is perpendicular to $\overrightarrow{AB}$.

![Diagram of a right triangle with point D perpendicular to AB]

a. Show that $\triangle ACB$ is similar to $\triangle ADC$ and to $\triangle CDB$.

b. Use part (a) to conclude that $|AC|^2 + |BC|^2 = |AB|^2$. 