



- By def, $a \perp AB$, $b \perp AC$, $c \perp BC$

- Construct dotted lines

- Height of each small Δ is a , b , c

- Algebra:

$$\text{area}(ABC) = \text{area}(ABP) + \text{area}(ACP) + \text{area}(BCP)$$

$$\frac{1}{2} BC \cdot h = \frac{1}{2} AB \cdot a + \frac{1}{2} AC \cdot b + \frac{1}{2} BC \cdot c$$

all sides
equal so:

$$h = a + b + c$$

