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Opgave 009

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$$a^2 = b^2 + x^2 \quad c^2 = b^2 + (b-x)^2$$

$$b^2 = a^2 - x^2$$

$$c^2 = a^2 - x^2 + \underline{(b-x)^2}$$

$$c^2 = a^2 - x^2 + b^2 + x^2 - 2bx$$

$$c^2 = a^2 + b^2 - 2bx$$

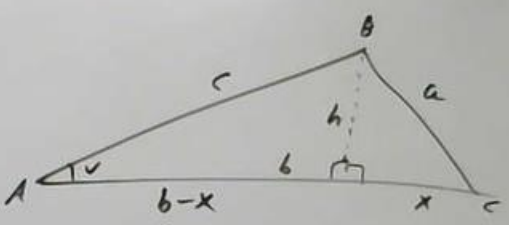
$$c^2 = a^2 + b^2 - 2ba \cos C$$


Diagram of a triangle ABC. Side lengths are labeled: a (opposite A), b (opposite B), and c (opposite C). Angle C is marked at vertex C. A dashed line from vertex B to the base AC divides it into segments of length $b-x$ and x . The height is labeled h .

$$\cos C = \frac{x}{a}$$

$$x = a \cos C$$