A BABYLONIAN TABLET

MEASURING

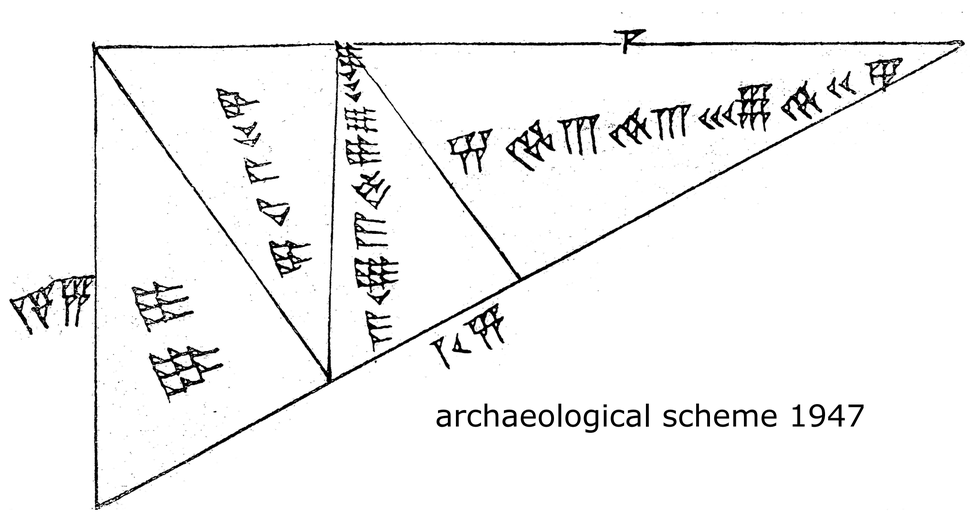
IM55357

Original photo Bagdad Museum

This clay tablet was found during excavations at Shaduppum (a Sumerian site in the suburbs south of Baghdad, modern Tell Harmal) in 1945. It dates from the First Dynasty of Babylon (1800 BC.) making it the one of the oldest texts of Babylonian mathematical problems. It was kept at the Iraqi Museum in Baghdad and referenced as IM55357. It was still there in 2001 and was the origin of the photo. But, unfortunately, it is not possible at present to know whether it disappeared in the looting of the museum in April 2003 or if it is part of the 6,000 pieces that have been retrieved.

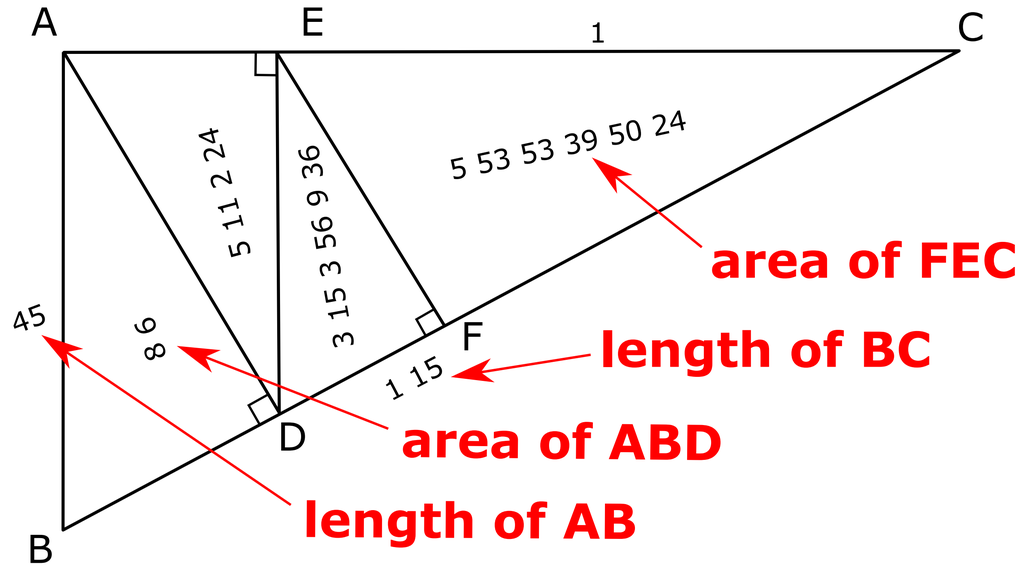
It is an example of a tablet catalogued as a "a text of a problem" by Assyriologists. In modern terms, it is **a corrected exercise**. At the top is a diagram of a right angled triangle, oriented with the right angle in the upper left corner. The height issuing from the right angle is plotted as well as 2 heights on the right angled triangles formed. There are numeric labels on the segments and in the triangles.

Cuneiform numeric labels



archaeological scheme 1947

The givens: sexagesimal values



What is the problem posed?

We search to calculate BD, AD, AE, ED

The solution uses two properties known to the Babylonians

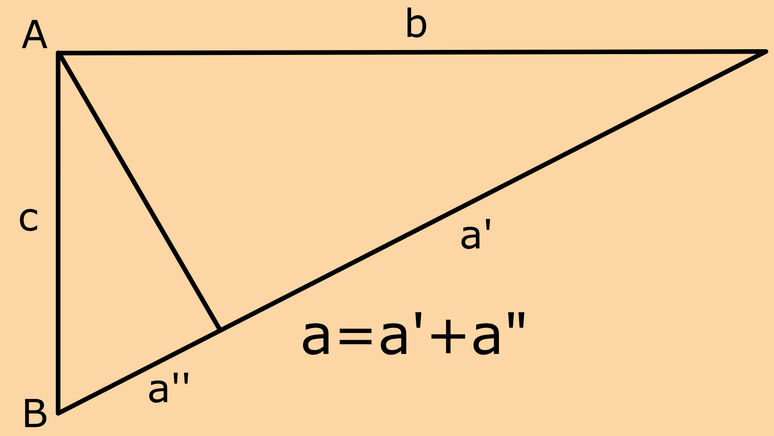
The relationships between the sides of the similar triangles

$$\frac{AD}{AB}=\frac{AC}{BC}$$ to calculate AD

The area of a right angled triangle

$$aire(ABD)=\frac{ADxBD}{2}$$ to calculate BD

Pythagoras Theorem



We don't know if the Babylonians had proved it.

Here is one of the modern proofs based on the same principle:

$a'/b=b/a$ $axa'=b^2$

$a''/c=c/a$ $axa''=c^2$

$$\mathbf{a^2=b^2+c^2}$$

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