Conditions

There are two formula to find the area of a parallelogram.

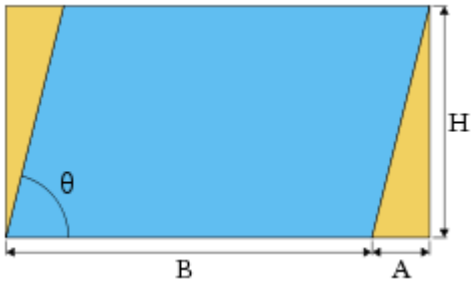
1. Base x Altitude 2. Base x Length

But when we use both formula, the area is different. why ?
Please send answer at my email address as well.

Solution

There are several formulas, which are define the area of parallelogram:

Consider a graph:



The area K of the parallelogram to the right (the blue area) is the total area of the rectangle less the area of the two orange triangles.

The area of the rectangle is

$$A_{\text{rect}} = (B + A) \times H$$

and the area of a single orange triangle is

$$A_{\text{tri}} = \frac{1}{2} A \times H.$$

Therefore, the area of the parallelogram is

$$\begin{aligned} K &= A_{\text{rect}} - 2 \times A_{\text{tri}} \\ &= ((B + A) \times H) - (A \times H) \\ &= B \times H \end{aligned}$$

Another area formula, for two sides B and C and angle θ, is

$$K = B \cdot C \cdot \sin\theta.$$

The area of a parallelogram with sides B and C (B ≠ C) and angle γ at the intersection of the diagonals is given by

$$K = \frac{|\tan\gamma|}{2} \cdot \left|B^2 - C^2\right|.$$

These formulas are well-known in all mathematical societies and **always give equal results**.