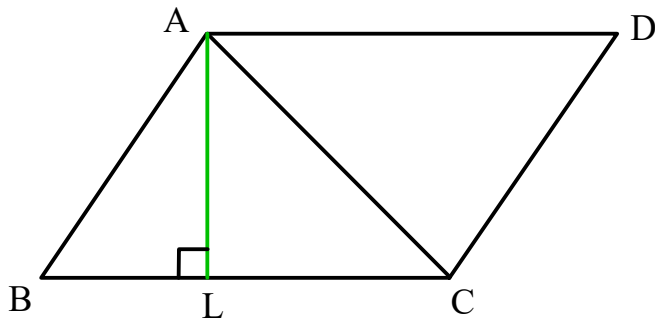


Area of a Parallelogram

Consider a parallelogram ABCD,



The diagonal AC divides it into two congruent triangles, ABC and ADC.

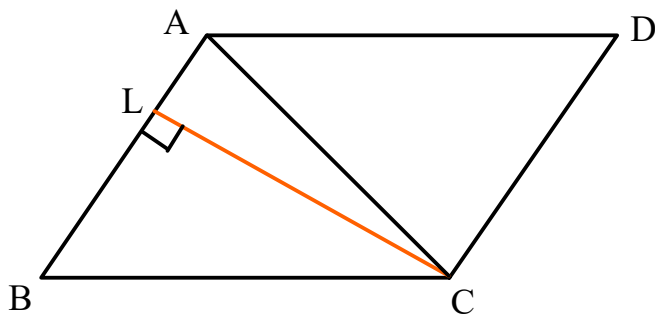
Area of ABCD = Area of ABC + Area of ADC

= 2 x Area of ABC (since the two triangles are congruent)

$$\therefore \text{Area of ABCD} = 2 \times \left(\frac{1}{2} \times BC \times AL \right) = BC \times AL$$

Or, Area of Parallelogram = Base (BC) x Height (AL)

Another side can be chosen as base.



Here, it can be shown that the area of ABCD = AB (base) x CL (height)

The height is the distance between the parallel sides depending upon the choice of base. If we denote the choice of side for base as b and the distance between the parallel sides as h , then

Area of Parallelogram = $b \times h$

Illustration: Find the area of a parallelogram with a base of 25 cm and a height of 16.8 cm.

Solution

Area = $b \times h$

Or, Area = 25 cm x 16.8 cm

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$$= 420 \text{ cm}^2$$

Exercise: The adjacent sides of a parallelogram are 32 cm and 24 cm. If the distance between the longer sides is 17.4 cm, find the distance between the shorter sides.

Answer: 23.2 cm, Hint: $32 \text{ cm} \times 17.4 \text{ cm} = 24 \text{ cm} \times h$