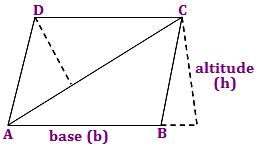
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**Area of Parallelogram**

Top of Form

ABCD is a parallelogram with base (b) and altitude (h).

[](https://www.math-only-math.com/images/area-of-parallelogram.jpg)

*Area of parallelogram    = 2 × Area of ∆ABC*  
  
                                   = 2 × 1/2 × base × height sq. units

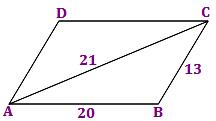
                                   = 2 × 1/2 × AB × CE sq. units

                                   = b × h sq. units

                                   = base × height sq. units

*Perimeter of parallelogram = 2(AB + BC)*   
  
                                       = 2 × (Sum of adjacent sides)

**1.**ABCD is a parallelogram in which AB = 20 cm, BC = 13 cm, AC = 21 cm. Find the area of parallelogram ABCD.

[](https://www.math-only-math.com/images/area-of-parallelogram-ABCD.jpg)

[**2Save**](https://www.pinterest.com/pin/create/button/?guid=rE97ydjkFe8K-1&url=http%3A%2F%2Fwww.math-only-math.com%2Farea-of-parallelogram.html&media=https%3A%2F%2Fwww.math-only-math.com%2Fimages%2Farea-of-parallelogram-ABCD.jpg&description=area%20of%20parallelogram%2Cperimeter%20of%20parallelogram)

**Solution:**   
  
Area of parallelogram ABCD = 2 area of ∆ABC

In ∆ ABC,

AB = 20 cm BC = 13 cm AC = 21 cm

So, s = (20 + 15 + 21)/2

         = 54/2

         = 27  
  
Therefore, area of ∆ABC = √(27 (27 - 20) (27 - 13) (27 - 21))

                                        = √(27 × 7 × 14 × 6)

                                        = √(3 × 3 × 3 × 7 × 2 × 7 × 2 × 3)

                                        = 2 × 3 × 3 × 7

                                        = 126 cm²   
  
Area of parallelogram ABCD = 2 area of ∆ABC

                                             = 2 × 126 cm²

                                             = 252 cm²