

# Mathematics

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(Chapter – 12) (Heron's Formula)(Exemplar Problems)

(Class – IX)

## Exercise 12.4

### Question 3:

The area of a trapezium is  $475 \text{ cm}^2$  and the height is 19 cm. Find the lengths of its two parallel sides if one side is 4 cm greater than the other.

### Answer 3:

Let the side of trapezium, DC =  $x$  cm

According to the question,

Other side, AB =  $(x + 4)$  cm

We know that,

*Area of trapezium*

$$= \frac{1}{2} (\text{Sum of parallel Sides}) \times \text{distance between parallel sides}$$

$$[\because \text{Area of trapezium} = \frac{1}{2} (a + b) \times h]$$

$$\Rightarrow 475 = \frac{1}{2} (x + x + 4) \times 19$$

$$\Rightarrow 475 = \frac{(2x + 4) \times 19}{2}$$

$$\Rightarrow \frac{2x + 4}{2} = \frac{475}{19}$$

$$\Rightarrow \frac{2(x + 2)}{2} = \frac{475}{19}$$

$$\Rightarrow \frac{2(x + 2)}{2} = \frac{475}{19}$$

$$\Rightarrow (x + 2) = \frac{475}{19}$$

$$\Rightarrow (x + 2) = 25$$

$$\therefore x = 23$$

$$\therefore \text{Other Side} = x + 4 = 23 + 4 = 27 \text{ cm}$$

Hence, the parallel side are 23cm and 27cm

