

# 10.1 & 10.2

## Areas of Triangles, Parallelograms, Trapezoids, Rhombi, & Kites

# REVIEW



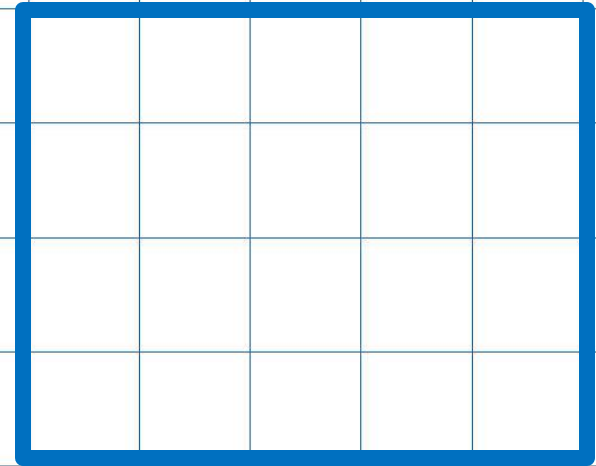
# Getting a better understanding of area

Draw a rectangle  
that has a  
base of 5 and  
height of 4.

If you were to explain what area is to  
a 1<sup>st</sup> grader, what would you say?

# Getting a better understanding of area

Let's say that on this graph paper, this represents 1cm.

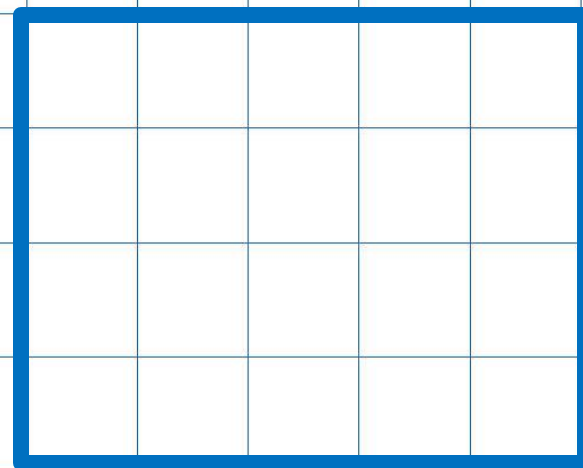


What's a square centimeter?

What's the abbreviation of this?

How many sq cm ( $\text{cm}^2$ ) are there in the above rectangle?

# Getting a better understanding of area



What's the relationship between measurements of the sides of a rectangle and the area?

# REVIEW



width

length



height

base

**Area =**

**Area =**

# Example

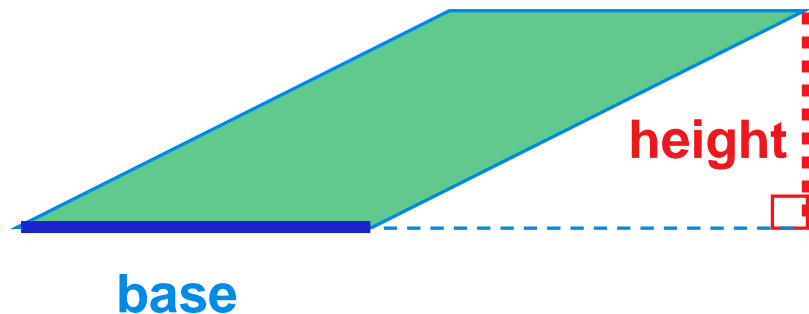
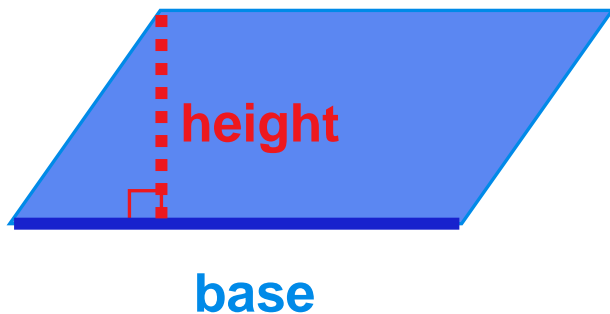
## Area of a Rectangle



**Area =**

The **base of a parallelogram** is the length of any one of the sides.

The **height of a parallelogram** is the perpendicular distance between the side whose length is the base and the opposite side.



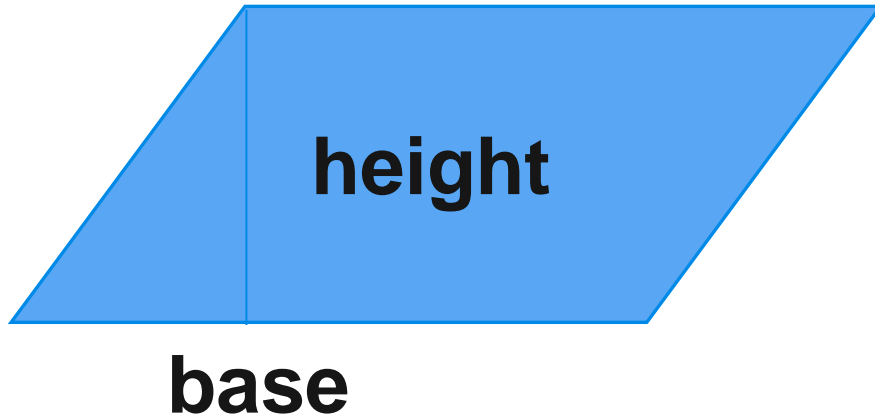


# Getting a better understanding of area

Draw 3 different parallelograms with a base of 5 and height of 3

Find the area of each.

# Area of a Parallelogram



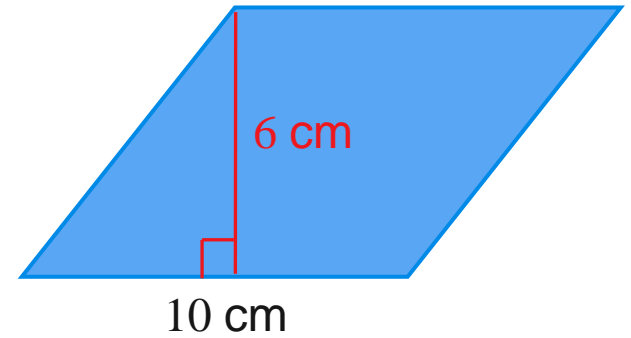
# Area Formulas for Rectangles and Parallelograms



**Area of a  
Rectangle =**

**Area of a  
Parallelogram =**

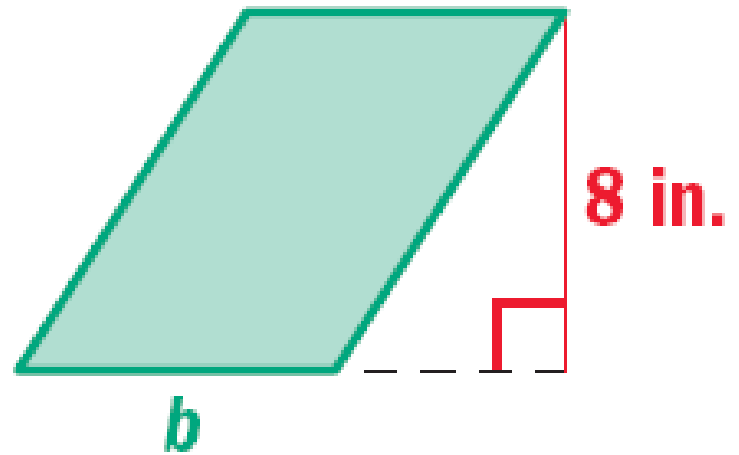
Find the area of the parallelogram.



## GUIDED PRACTICE

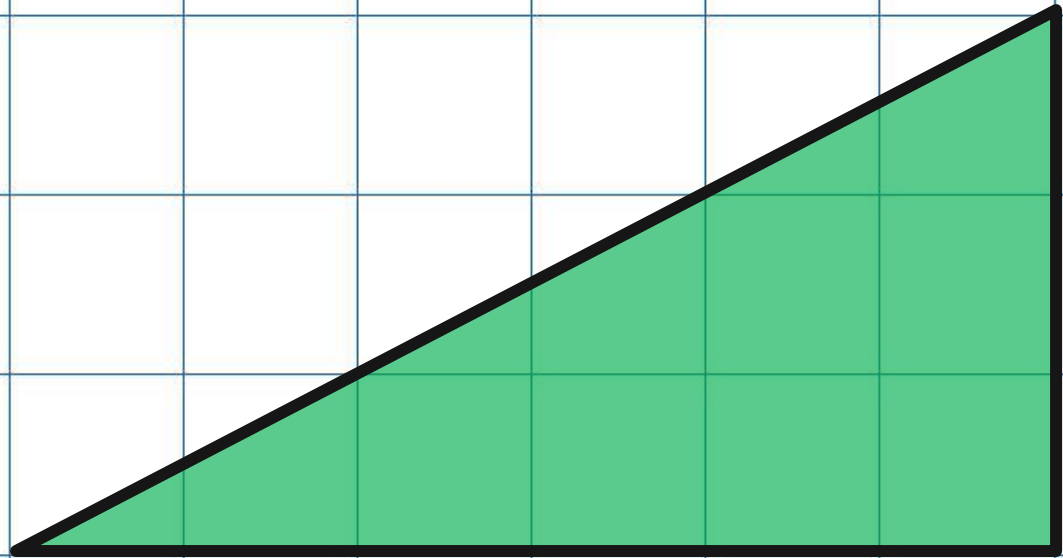
Use the area  $A$  of the parallelogram to find its base  $b$  or height  $h$ .

$$A = 56 \text{ in.}^2$$



# Getting a better understanding of area

Let's say you didn't know the area formula for a triangle, what is the area of this triangle?



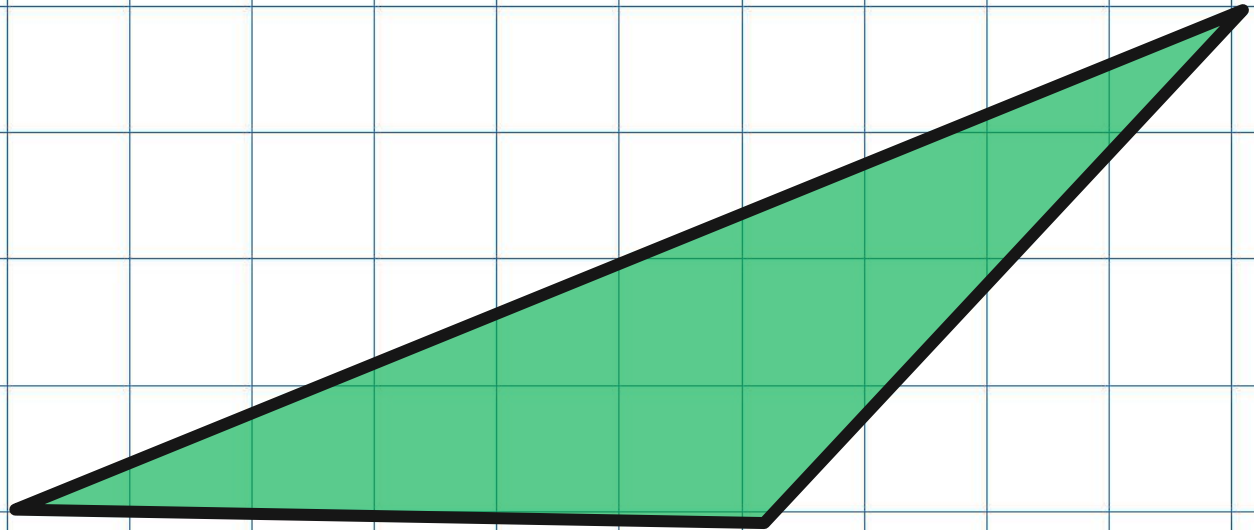
# Getting a better understanding of area

Let's say you didn't know the area formula for a triangle, what is the area of this triangle?



# Getting a better understanding of area

Let's say you didn't know the area formula for a triangle, what is the area of this triangle?



Making a conjecture

What's the relationship between a triangle and parallelogram with the same base and height?

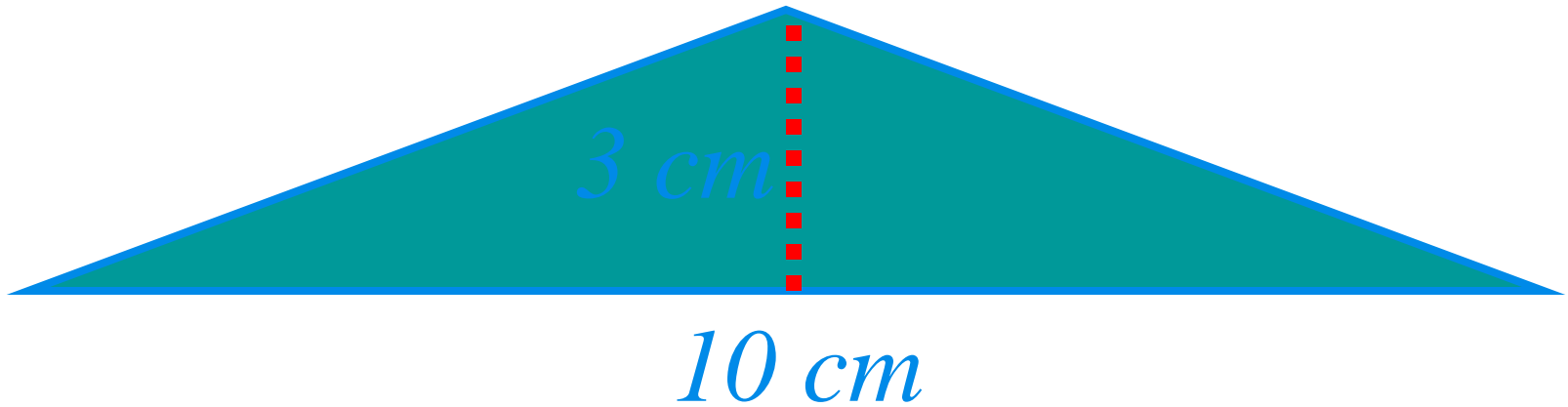


# Area Formula of a Triangle



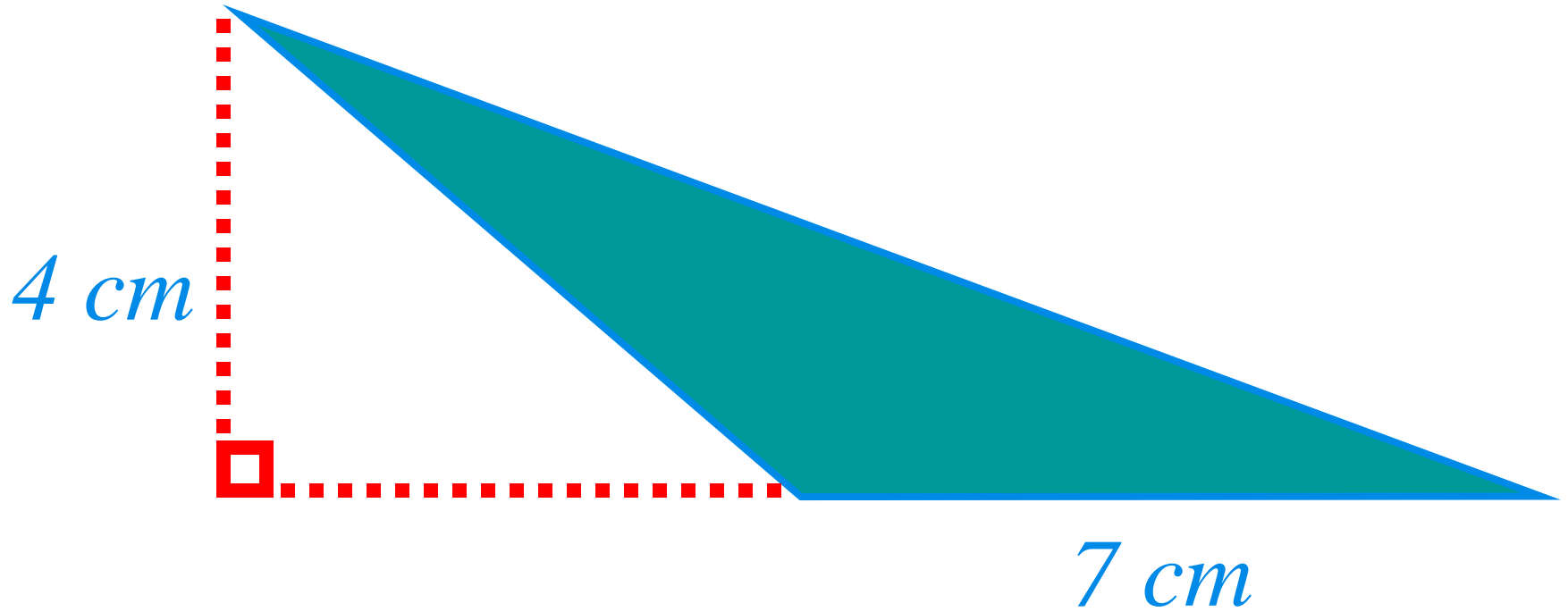
**Area of  
Triangle =**

Find the area of the following triangle



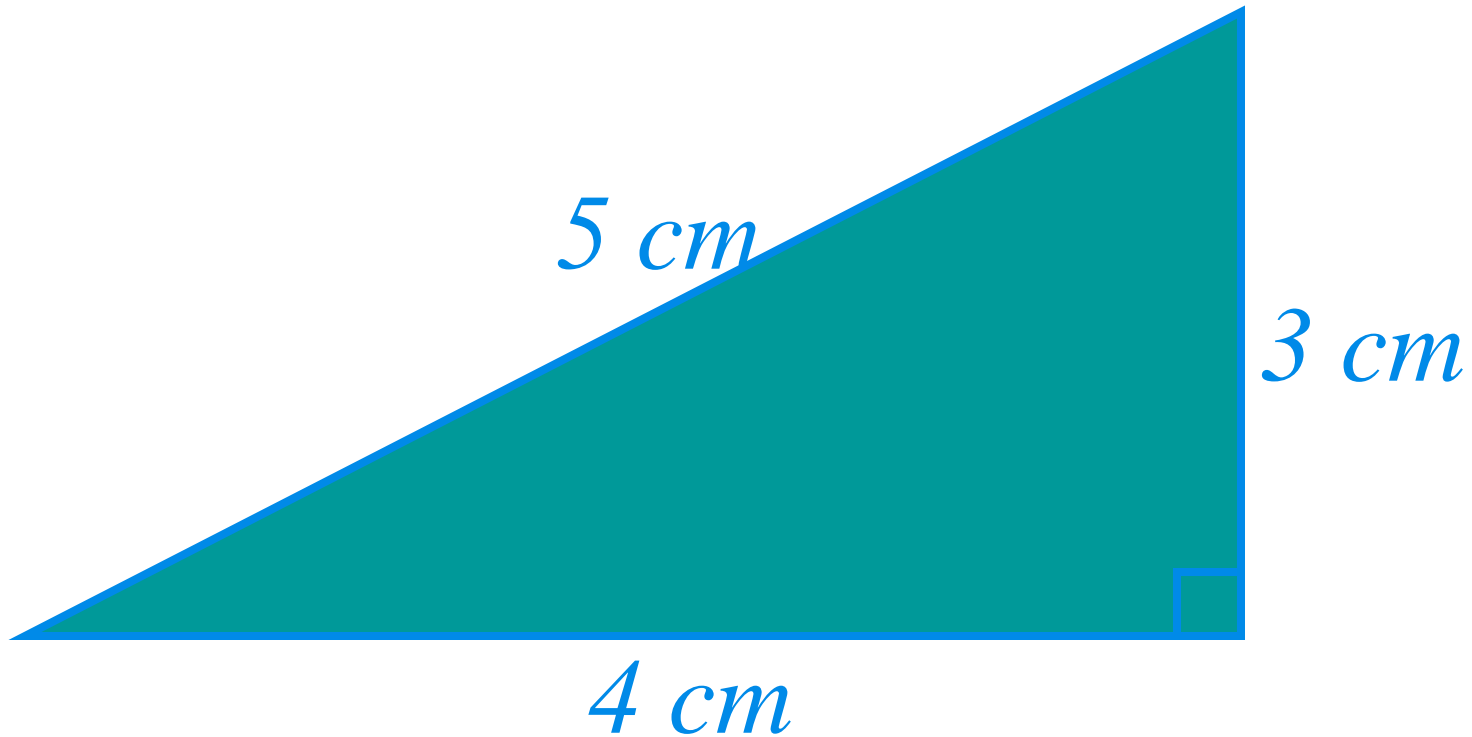
**Area =**

Find the area of the following triangle



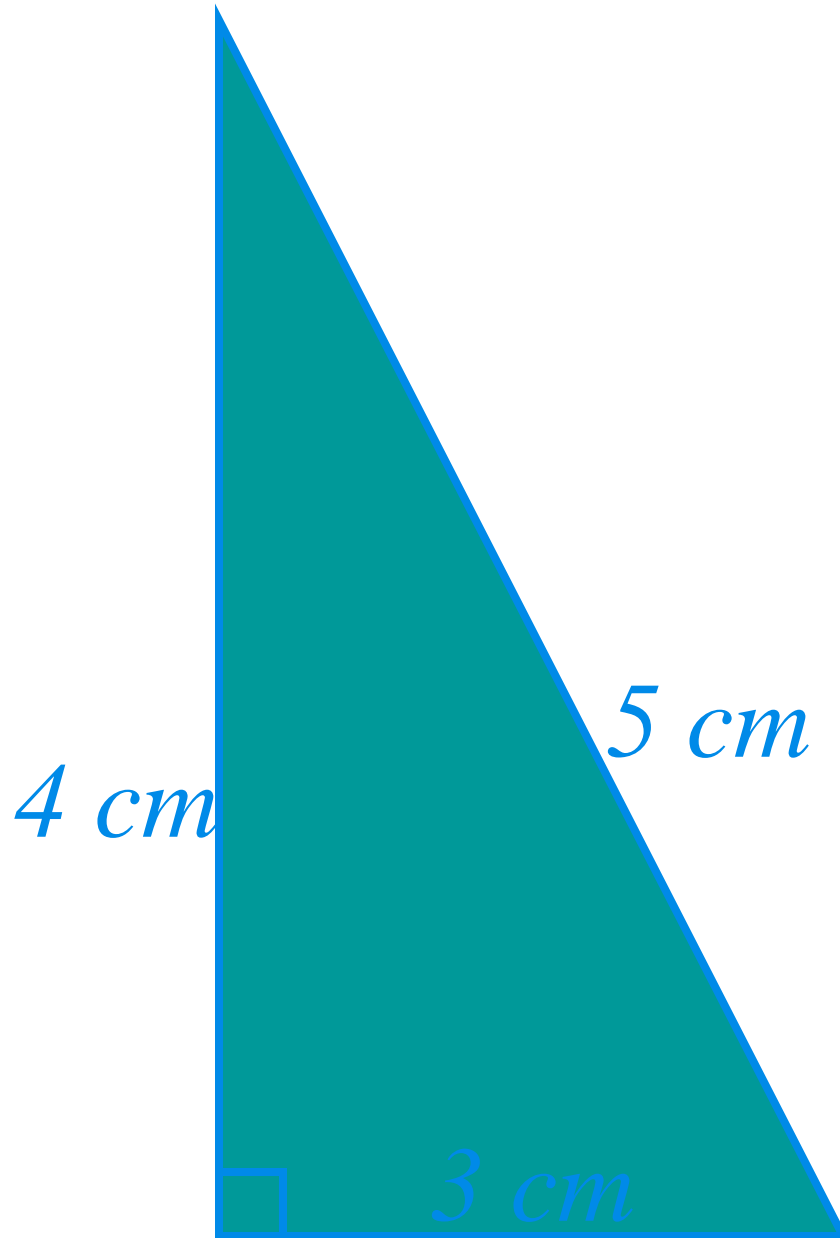
**Area =**

Find the area of the following triangle



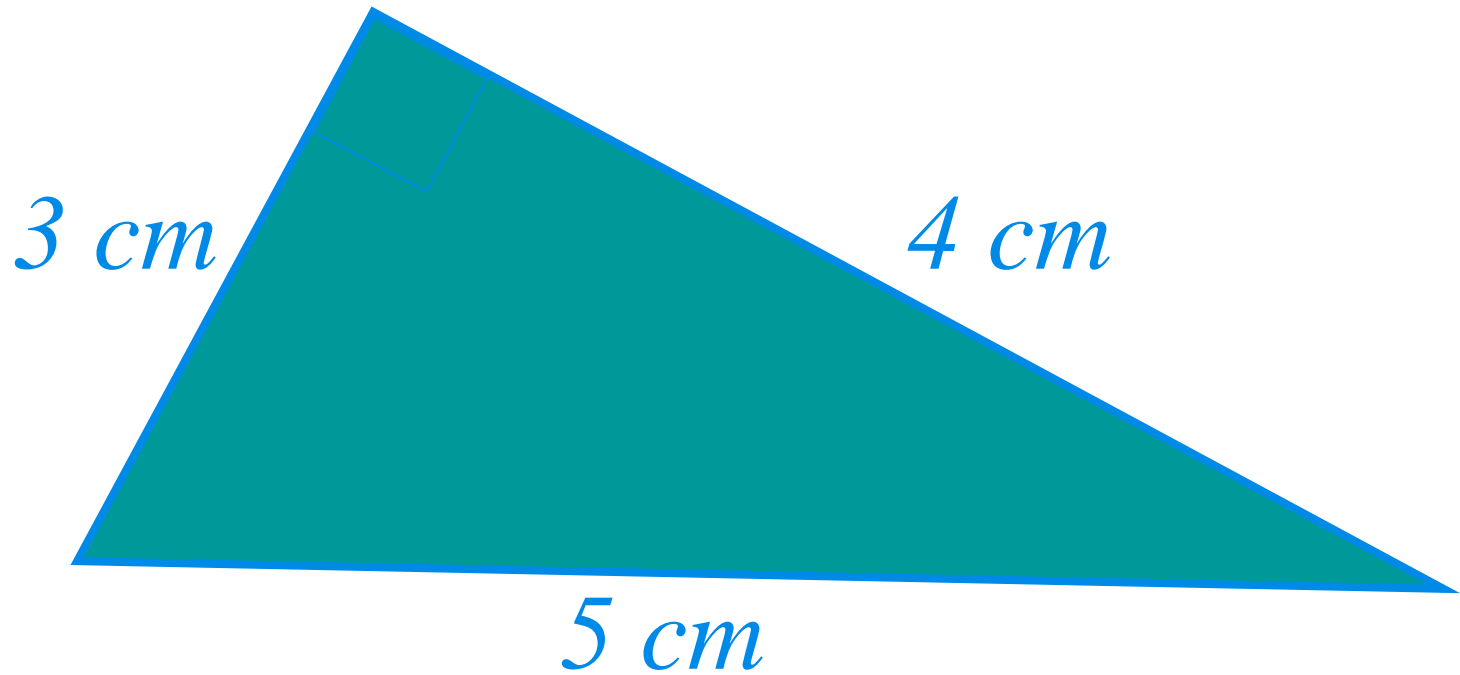
**Area =**

Find the area of the following triangle



**Area =**

Find the area of the following triangle



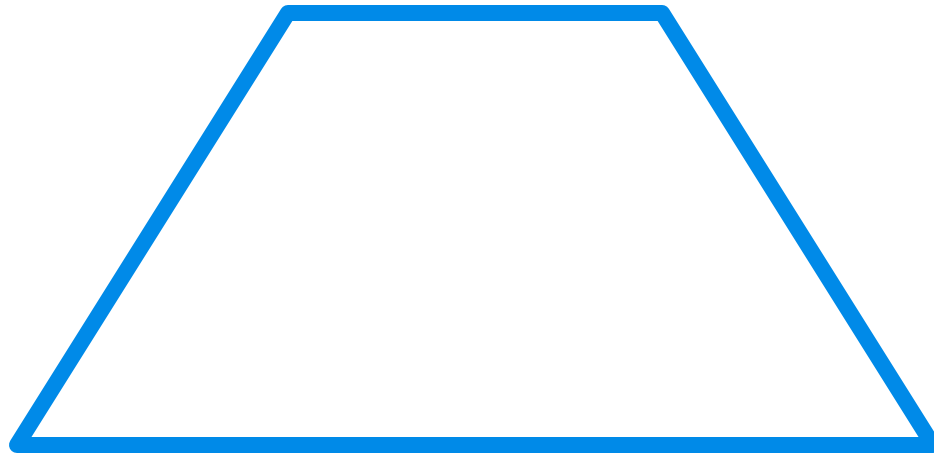
**Area = 6 cm<sup>2</sup>**

**What is the height?**

## Review

# TRAPEZOID

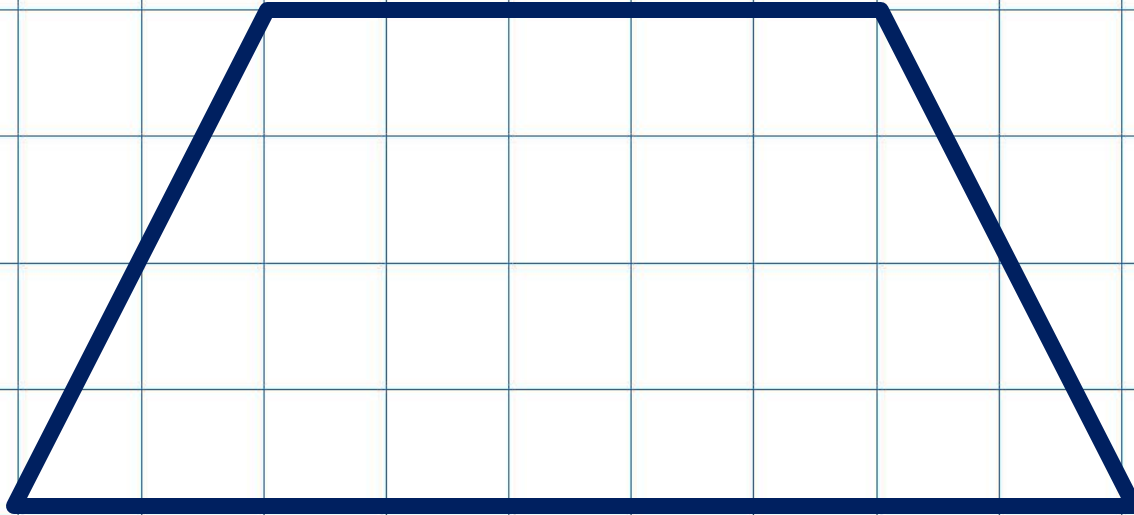
A quadrilateral with exactly one pair of parallel sides



# Getting a better understanding of area

Let's say you didn't know the area formula for a trapezoid, what is the area of this trapezoid?

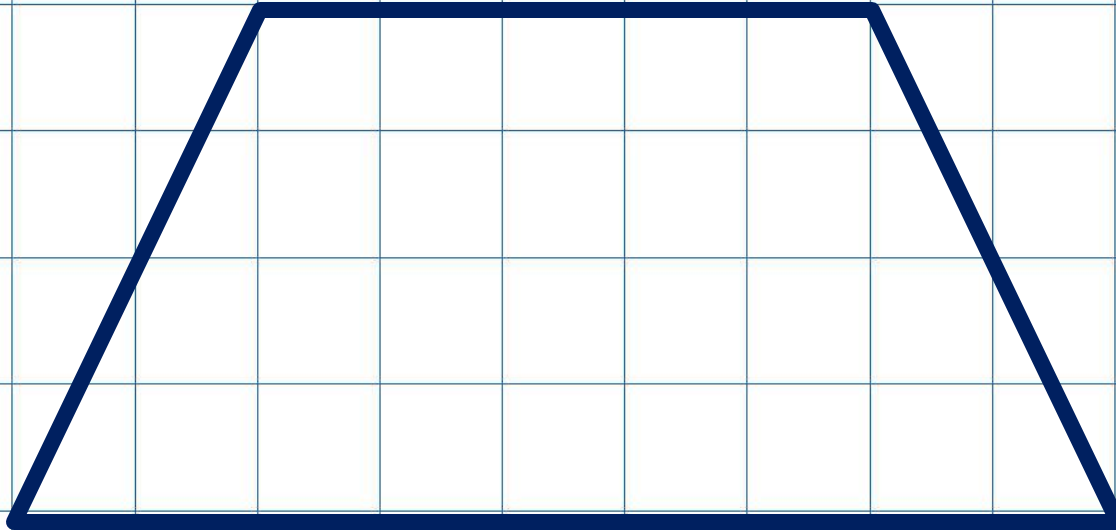
Can you find this area by splitting only to two shapes?



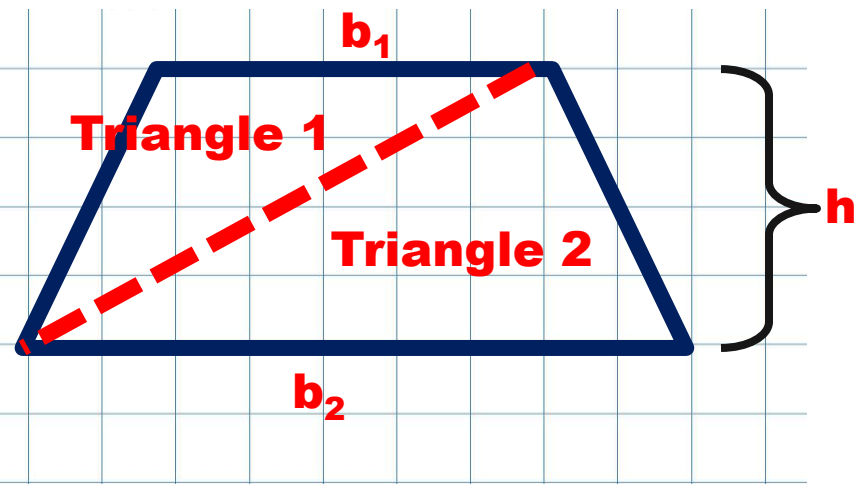


# Getting a better understanding of area

Thus, one way to find the area of a trapezoid is to find the area of both triangles and then add them up.



# Coming up with a single formula



# Area Formula of a Trapezoid

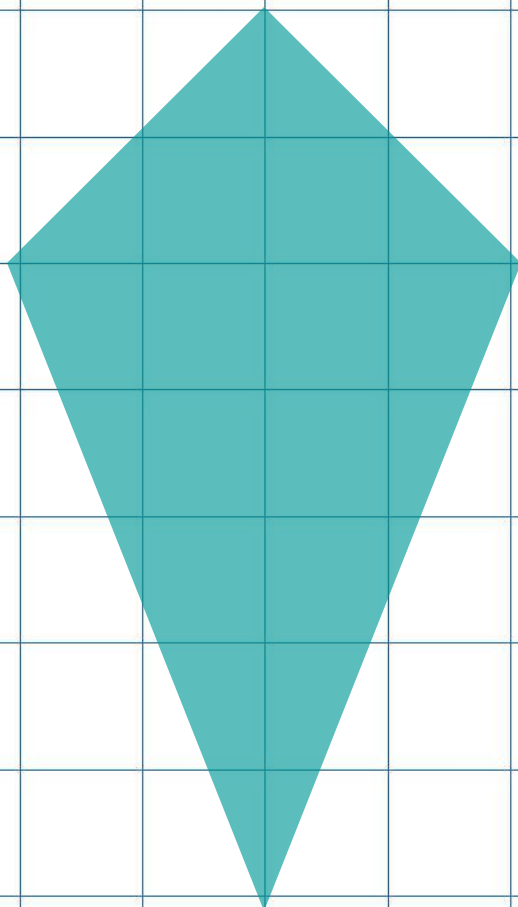


**Area of  
Trapezoid =**

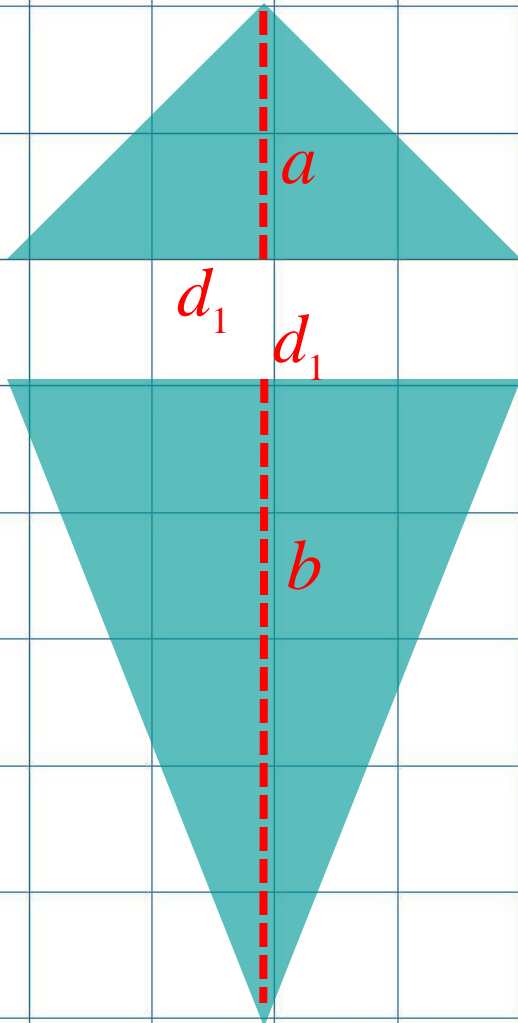
# Getting a better understanding of area

How do you find the area of a kite? Or a rhombus?

What's the area of this kite?



# Getting a better understanding of area



# Area Formulas for Rhombi and Kites



**Area of a  
Rhombus  
or Kite =**

4)

