

# **WorkBook**

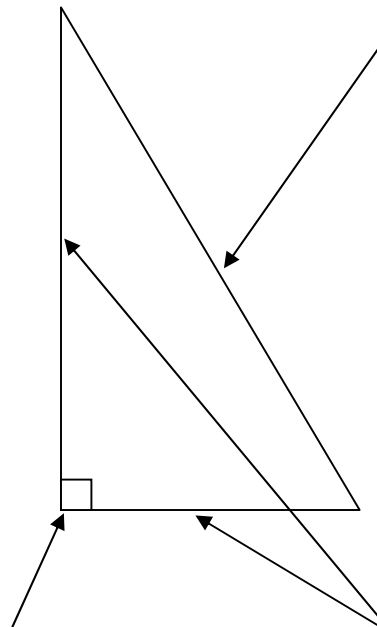
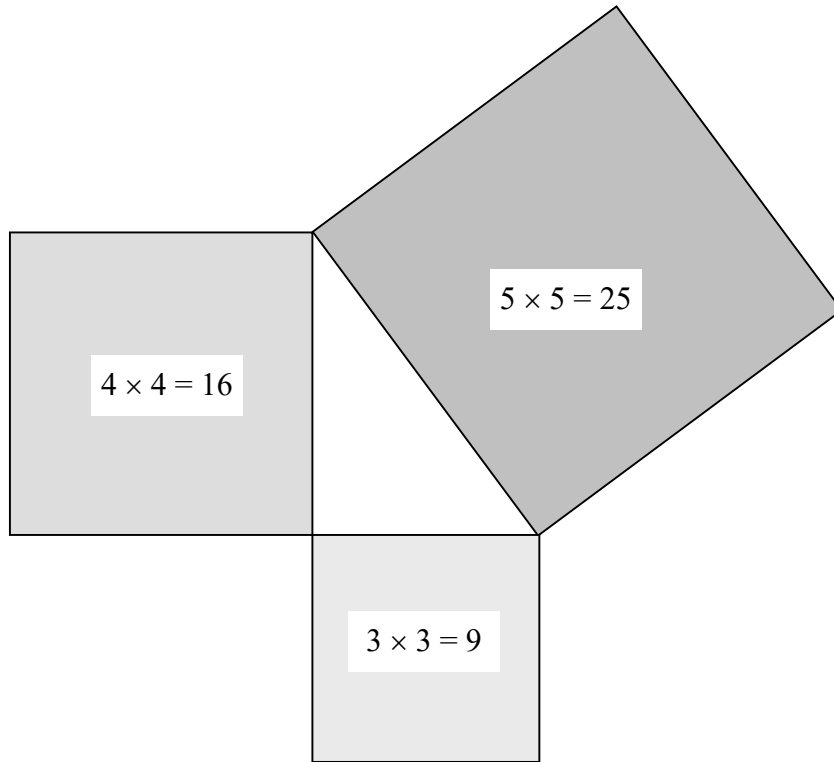
## **PYTHAGORAS' THEOREM**

### **WorkNotes**

# WorkBook

## PYTHAGORAS' RULE (Sheet 1)

Pythagoras' Rule states "the square of the hypotenuse is equal to the sum of the squares of the other two sides"



The **Hypotenuse** is the longest side of the right triangle. It is opposite the right angle.

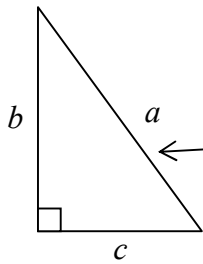
The **Right Angle** is the largest angle in a right triangle. It is 90 degrees.

The sides **Adjacent** to the right angle are the sides that form the right angle.

# WorkBook

## PYTHAGORAS' RULE (Sheet 2)

Pythagoras' Rule states "the square of the hypotenuse is equal to the sum of the squares of the other two sides"

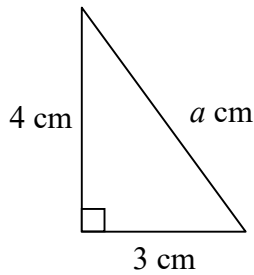


$$a^2 = b^2 + c^2$$

The **Hypotenuse** is the longest side of the right triangle. It is opposite the right angle.

### Finding the hypotenuse. (The longest side)

#### Example 1



[Remember that  $a^2 = b^2 + c^2$  ]

$$a^2 = 4^2 + 3^2$$

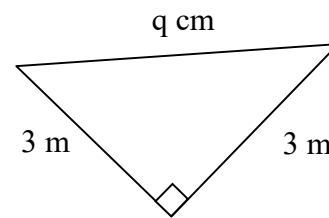
$$a^2 = 16 + 9$$

$$a^2 = 25$$

$$a = \sqrt{25}$$

$$a = 5$$

#### Example 2



[Remember that  $a^2 = b^2 + c^2$  ]

$$q^2 = 3^2 + 3^2$$

$$q^2 = 9 + 9$$

$$q^2 = 18$$

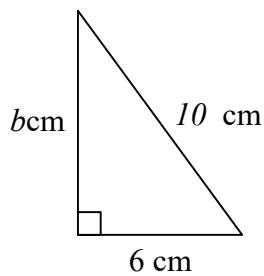
$$q = \sqrt{18}$$

$$q = 4.242640687$$

$$q = 4.2 \text{ (Correct to 1 decimal place)}$$

### Finding an adjacent side. (A shorter side)

#### Example 3



[Remember that  $a^2 = b^2 + c^2$  ]

$$10^2 = b^2 + 6^2$$

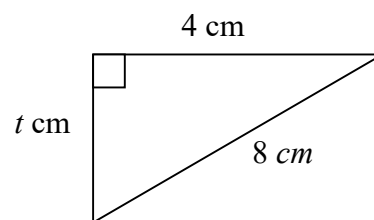
$$100 = b^2 + 36$$

$$64 = b^2$$

$$b = \sqrt{64}$$

$$b = 8$$

#### Example 4



[Remember that  $a^2 = b^2 + c^2$  ]

$$8^2 = t^2 + 4^2$$

$$64 = t^2 + 16$$

$$48 = t^2$$

$$t = \sqrt{48}$$

$$t = 6.928203230$$

$$t = 6.9 \text{ (Correct to 1 decimal place)}$$