

To **Jem of Hackney Wick** (2020AD)

From **Pythagoras of Samos** (500BC)

Jem, can you please help me with a theory of mine.

First of all measure this rectangle in centimetres:

Width =

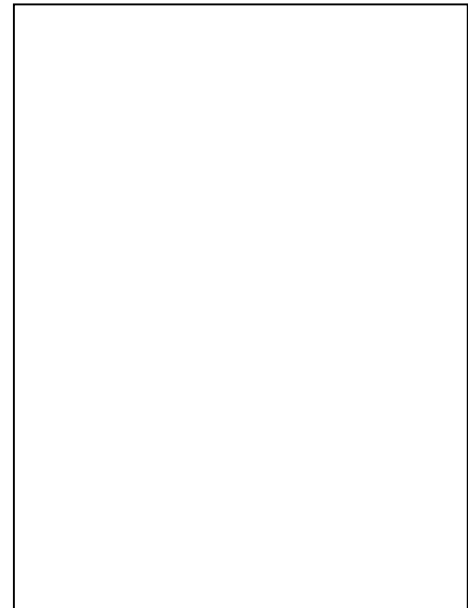
Height =

Now draw a diagonal from top left to bottom right

Please draw this very accurately, then measure it

Diagonal =

You have just measured the three sides of a right-angled triangle



Multiply the height by itself and multiply the base length by itself and add these results together

Now multiply the diagonal length by itself and compare it to this sum. What do you notice?

I call the diagonal the **hypotenuse** of the triangle, and my theory is that:

“The square on the hypotenuse is the sum of the squares on the other two sides”

Jem, is my theory true?

For this theory to be true it must apply to **all** right-angled triangle, not just this one.

Can you draw a different rectangle, put the diagonal in and see if it's still true?

Of course you can draw any size rectangle but try one that's 5cm by 11cm