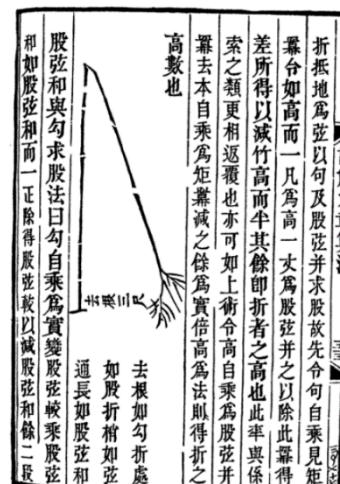**PYTHAGORAS & TRIGONOMETRY – Year 9/10**

The Chinese Bamboo Problem

The kou ku theorem:

勾股定理

This picture is of an ancient Chinese maths problem from the earliest known Chinese mathematical text, the *Chou Pei Suan Ching*, dating from around 500 to 200 BC. It concerns the kou ku (pronounced go goo) theorem.

What do you think it might be about?

The translation of the original question states:

> *There is a bamboo 10 chi high, the upper end of which, being broken, touches the ground at 3 chi from the foot of the stem. What is the height of the break? (Note: a chi is about 23 cm).*

Can you solve the problem?

Here is the solution method shown in the *Chou Pei Suan Ching*.

> *Take the square of the distance from the foot of the bamboo to the point at which its top touches the ground, and divide this by the length of the bamboo. Subtract the result from the length of the bamboo, and halve the resulting difference. This gives the height of the break.*

Is this the same as your solution?