**«THE PYTHAGOREAN THEOREM» (P.T.)**

**WE NEAD:**

* A measuring tape of 12m
* A laser point
* A calculator
* A notebook for each team

**WORKSHEET**

1. **You read carefully all the text below.**

Given that we have a right triangle ABC (=900). Then, BC is the hypotenuse and AB, AC are the two legs meet at 900 angle, as we can see in the sketch below.

C

b a

A c B

It is proven that ;

“ The square of the hypotenuse is equal to the sum of the squares of the other two sides “, that is;

a2 = b2 + c2

* **If we know the two sides, we can figure out the third one**.

Also,

“It the square of the longest side of a triangle, equals to the sum of the squares of the other two sides, then the angle opposite the longest side,

is right , that mean the triangle is right.”

* **If we know the three sides of a triangle, we can figure out if the triangle is right.**

This is the vice versa of the P.T.

All the above, can be applied in topographie and architecture

1. **We give you the right angle shown in the sketch below.**

**We place point B in Ax and C in Ay, so that AB=3 and AC= 4.**

**Apply the P.T. and figure out the BC side (hypotenuse).**

**Verify the number you found by measuring BC on the sketch.**

x

A y

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Calculate the perimeter of the triangle.

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1. **You are asked to place vertically a stick on the ground.**

**Given that, the only tool you have, is a measuring tape of 12 m, describe, in detail, the steps you follow to do so.**

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1. **By using the tool of a “laser point “ and a calculator, you are asked to figure out the length of the ladder that we must use, in order to go near the birds’ nest and place the wodden structure.**

**(**The problem was given to the students in the school yard and asked for real figures**).**



Discribe the steps.

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