EXPT. NO. | NAME | 1 | M T W T F S S | Page No. | Date: | YOUVA

MATH PROJECT

TOPIC : PYTHAGORAS THEOREM

ADITYA CHARAN
9C
RN 07

Teacher's Signature:

ACKNOWLEDGEMENT

I would like to express my special thanks of Gratitude to my teacher as well as my friends and family who gave me the golden opportunity to do this wonderful project on the topic 'The Pythagoras Theorem'.

This Project also helped me in doing a lot of research and I gained a lot of knowledge. I am really thankful to them.

Teacher's Signature:

EXPT. NO. | NAME | (3) | Page No.: | Date: | YOUVA

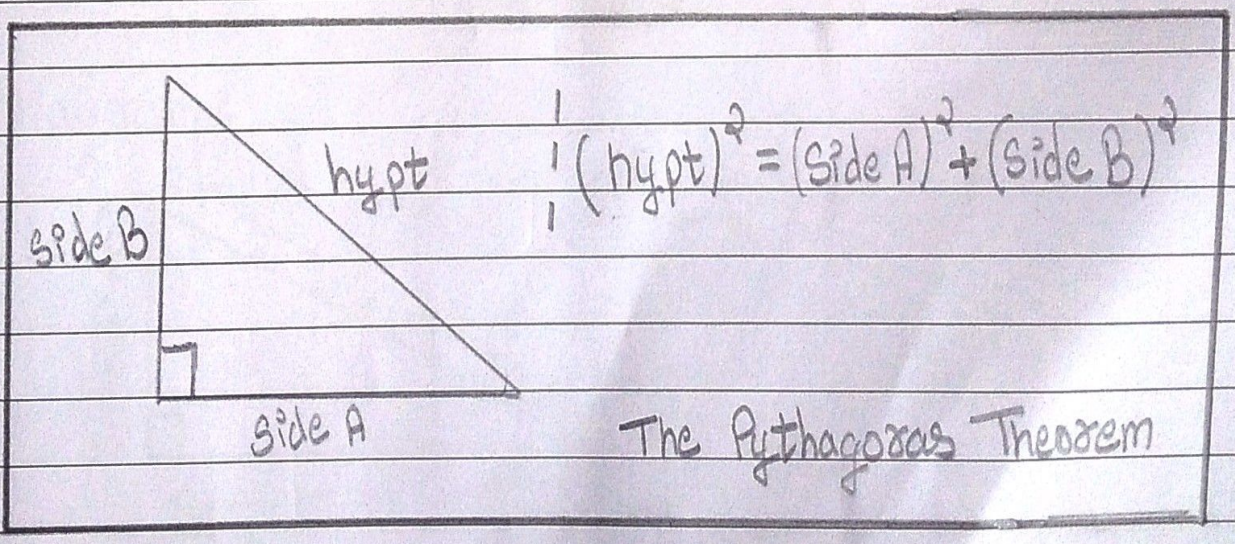
M T W T F S S

INTRODUCTION

* Pythagoras of Samos:

Pythagoras was a Greek Philosopher who made important developements and contributions in ~~to~~ the field of Mathematics, Astronomy and the Theory of Music.

The widely used theorem, now known as the 'Pythagoras Theorem' was known to Babylonians a 1000 years earlier but Pythagoras was the first to prove it.



Teacher's Signature:

EXPT. NO. | NAME | (40) | M T W T F S S | Page No.: | Date: | YOUVA

THE PYTHAGORAS THEOREM

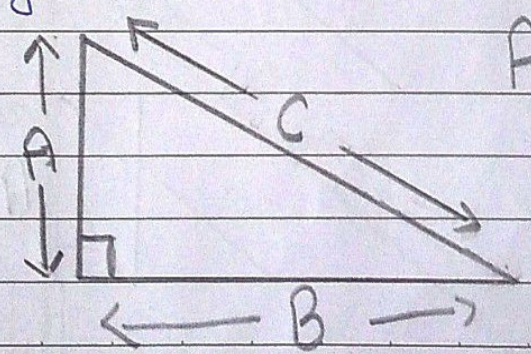
* The sum of squares on the legs of a Right-Angle Triangle is equal to the square of the Hypotenuese.

* Hypotenuse: The side opposite to the right angle.

* Algebraic Formula:

$$a^2 + b^2 = \text{hypotenuse}^2$$

* Diagram:



$$A^2 + B^2 = C^2$$

[Hypt]

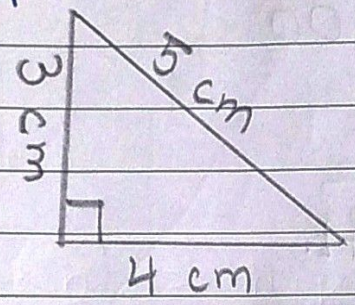
Teacher's Signature:

EXPT. NO. | NAME | (5) | Page No. | Date: | YOUVA

THE PYTHAGOREAN TRIPLETS

* Integer Triplets that satisfy thae equation $[a^2 + b^2 = c^2]$ are called Pythagorean Triplets.

* Examples : i] (3, 4, 5)

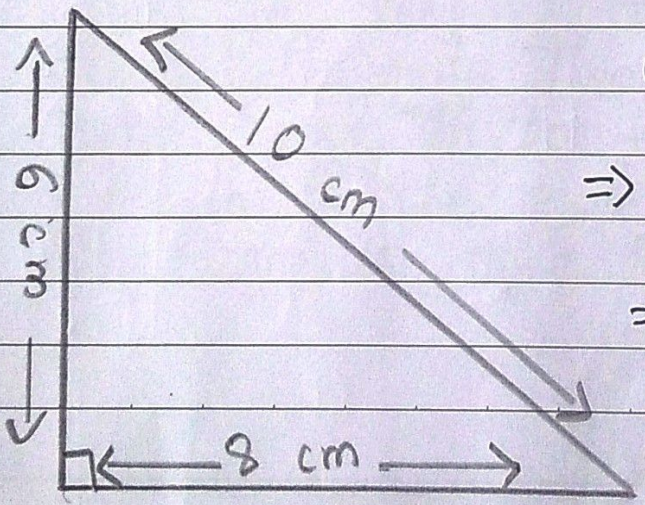


$3^2 + 4^2 = 5^2$

$\Rightarrow 9 + 16 = 25$

$\Rightarrow 25 = 25$

ii] (6, 8, 10)



$6^2 + 8^2 = 10^2$

$\Rightarrow 36 + 64 = 100$

$\Rightarrow 100 = 100$

Teacher's Signature:

EXPT. NO. NAME

6

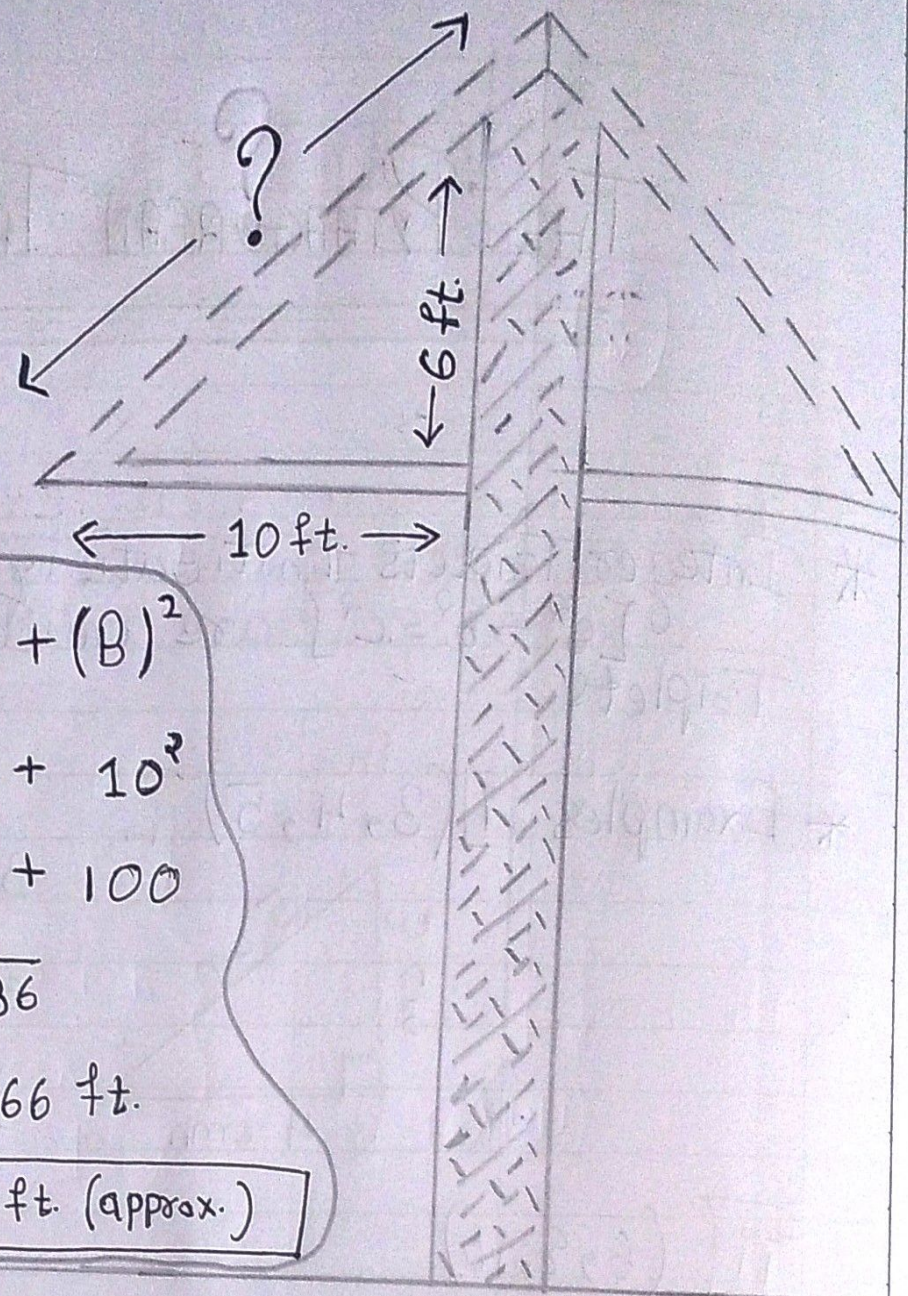
Page No.: Date: YOUVA

REAL WORLD EXAMPLES

1. Architecture & Construction.

→ Given two straight lines, the Pythagoras Theorem allows ~~to~~ you to calculate and find the length of a diagonal connecting them. This Application is frequently used in Architecture and wood-working, or any other physical construction projects. For Example, in building of a sloped roof. If One Knows the height of the roof and the length it has to cover, the Pythagoras Theorem can be taken into use to find the diagonal length of the roof's slop.
One can use this Info to cut a

Teacher's Signature:



$$(Hypt)^2 = (A)^2 + (B)^2$$

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

$$= 36 + 100$$

$$\Rightarrow Hypt = \sqrt{136}$$

$$= 11.66 \text{ ft.}$$

$$= \boxed{12 \text{ ft. (approx.)}}$$

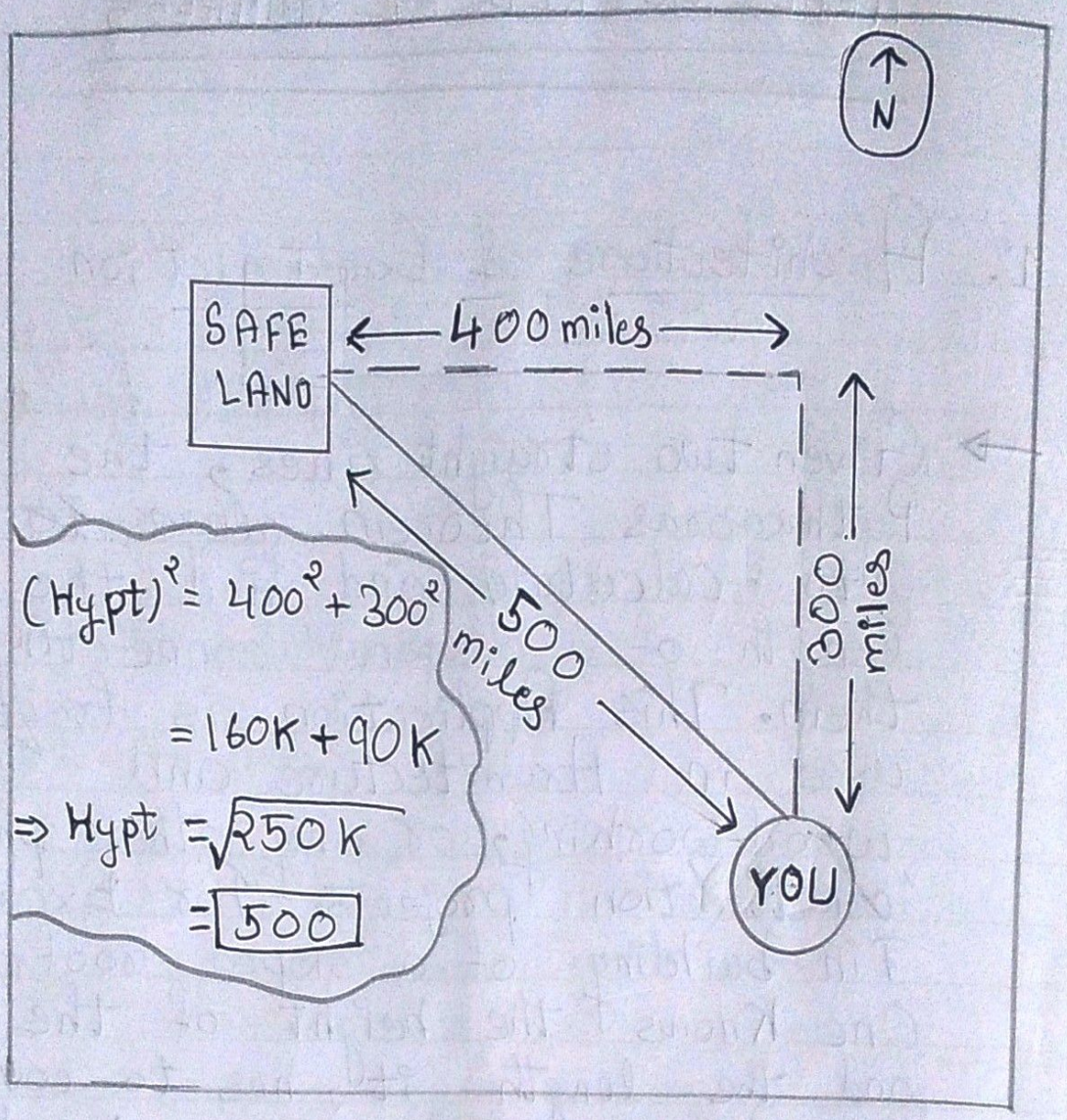
properly sized beam and some planks to support the roof, Or can calculate the area of roof that needs to be shingled.

2. NAVIGATION

→ The Pythagoras Theorem is useful for 2-Dimensional navigation. One can use it to find shortest distance between to different points.
For Example, if one is navigating, in sea, to a point that is 300 miles North and 400 miles West, one can use the theorem to find the distance from its vessel to that point and calculate how many degrees to the West (of North) one would need to follow to reach that point. The shortest distance connecting the northern and western distances will be the hypotenuse [diagonal].

Teacher's Signature:

9



$(Hypt)^2 = 400^2 + 300^2$

$= 160K + 90K$

$\Rightarrow Hypt = \sqrt{250K}$

$= \boxed{500}$

EXPT. NO | NAME | M T W T F S S | Page No.: | Date: | YOUVA

BIBLIOGRAPHY

1. WIKIPEDIA (WIKIMEDIA inc.)

2. Britannica.com

Teacher's Signature: