

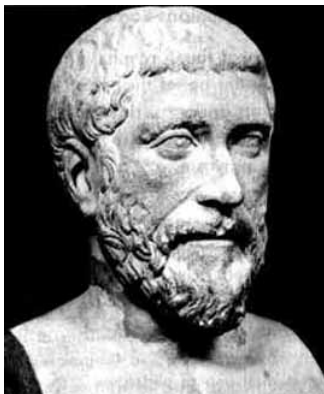
## 8.6 Application - Right Triangles

### ■ Need To Know

- The Pythagorean Theorem
- Apply to square root equations



## Pythagoras and The Theorem



### Pythagoras and the Pythagoreans

[Pythagoras](#) of [Samos](#) (c.560-c.480BC), mathematician, philosopher and religious leader, founded a religious community (the Pythagorean Order) in [Croton](#) on the coast of Italy around 530 BC.

According to [Aristotle](#) (see [Metaphysics 985b-986a](#)), the Pythagoreans, first to develop the science of mathematics, revered number as the first principle of all things, probably due to their discovery that the principles of musical harmony could be explained with mathematics. <http://plato.evansville.edu/>

## Pythagoras and The Theorem



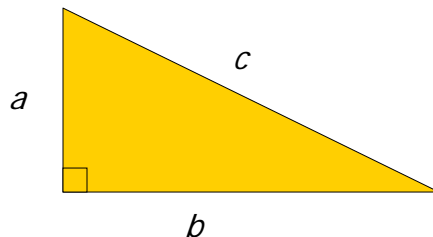
## Pythagoras and The Theorem

**Pythagorean Theorem:**

In any right triangle,

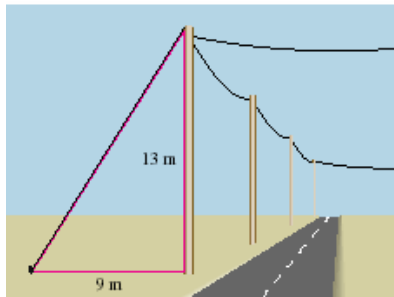
if  $a$  and  $b$  are the lengths of the legs and

$c$  is the length of the hypotenuse, then  $a^2 + b^2 = c^2$ .



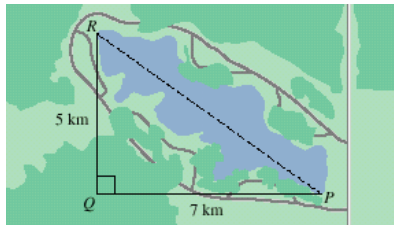
See SketchPad proof by Leonardo Da Vinci

## Applications



How long does a guy wire need to be to secure the pole?

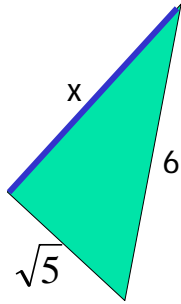
## Applications



How wide is the lake?

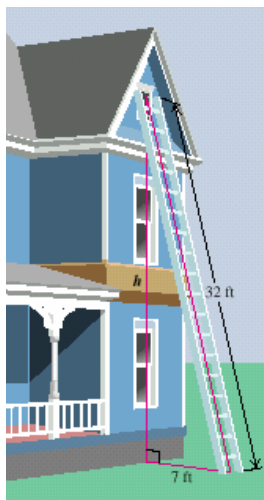
## Applications

Find the missing side



## Applications

How high is it to the attic window?



end