

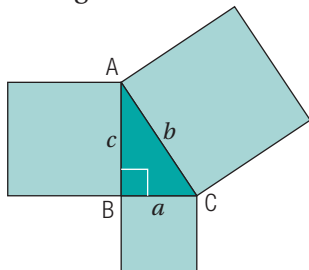


Investigation 3

Theorem of Pythagoras

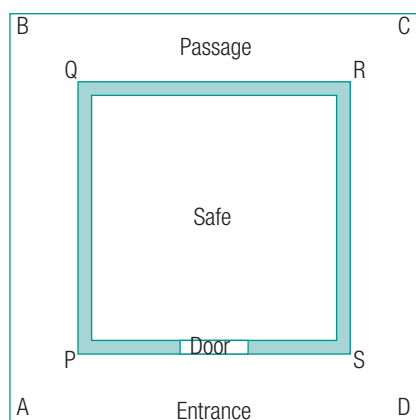
Theorem of Pythagoras:

- In words: In any right-angled triangle the square on the hypotenuse is equal to the sum of the squares on the other two sides.
- In diagrammatic form:



- In symbolic form: If $\triangle ABC$ has $\hat{B} = 90^\circ$, then $AC^2 = AB^2 + BC^2$ or $b^2 = c^2 + a^2$.

Problem: A passage all around a safe is 2 m wide. A steel plate, 5 cm thick, is slid in an upright position along the floor of the passage to the back of the safe.



Investigation: Determine the maximum length of the plate that can be moved around the corners of the safe without lifting it from the floor. Explain your solution step by step, with reasons.