

4.5 Converse of the Pythagorean Theorem

Objective: Use the Converse of Pythagorean Theorem.

Use side lengths to classify triangles.

Converse of the Pythagorean Theorem: If $c^2 = a^2 + b^2$,
then triangle ABC is a right triangle.

You can determine whether a triangle is acute, right, or obtuse by its side lengths.

In triangle ABC with longest side c:

$$\text{If } c^2 < a^2 + b^2,$$

then triangle ABC is acute.

$$\text{If } c^2 = a^2 + b^2$$

then triangle ABC is right.

$$\text{If } c^2 > a^2 + b^2$$

then triangle ABC is obtuse.

Checkpoint at the bottom of page 202.