7.1 The Pythagorean Theorem and its Converse

Pythagorean Theorem:

In a right triangle, the sum of the squares of the measures of the legs equals the square of the measure of the hypotenuse.

Example: Find x

Converse of the Pythagorean Theorem:

If the sum of the squares of the measures of two sides of a triangle equals the square of the measure of the longest side, then the triangle is a right triangle.

Pythagorean Triple:

Three whole numbers that satisfy the equation: a b c

Example: 3, 4, 5

Determine whether the set of measures can be the sides of a right triangle. Then state whether they form a Pythagorean Triple.

1. 5, 12, 13
2. 8, 15, 16
3. 1.5, 2, 2.5
4. 1/3, 1/4, 1/5