7.2 Use the Converse of the Pythagorean Theorem

Converse of the Pythagorean Theorem

If c2=a2+b2, then ABC is a right triangle.

Example. Tell whether the given triangle is a right triangle: 7, 24, 25

How do we tell if a triangle is acute or obtuse?

Thm 7.3 -Acute Triangle

If c2 < a2+b2,then the triangle is acute.

Thm 7.4-Obtuse Triangle

If c2 > a2+b2,then the triangle is obtuse.

Can segments with lengths of 11.2 inches, 6.5 inches, and 7.1 inches form a triangle? If so, would the triangle be acute, right, or obtuse?

Ex. The sides of a triangle have lengths x, x+4, and 20. If the length of the longest side is 20, what values make the triangle acute?

There are 3 parts to this problem. . .

1. A side length can’t be less than 0.
2. The 3 segments have to make a triangle. The sum of the smaller segments has to be greater than the third.
3. What values make this an acute triangle?

c2 < a2+b2