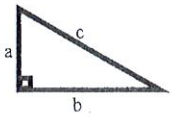
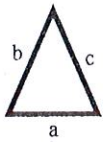
Determining Triangle Type using Pythagorean Theorem

Big Ideas:

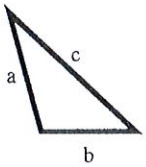
Right Triangles, true when: $a^2 + b^2 = c^2$



Acute Triangles, true when: $a^2 + b^2 > c^2$



Obtuse Triangles, true when: $a^2 + b^2 < c^2$



Note: side c is always the longest, (or equal to the longest) side in the triangle.

Examples:

What type of triangle would be made from the following lengths?

a. 6, 7, 8

$a^2 + b^2$ c^2

$6^2 + 7^2$ 8^2

$36 + 49$ 64

$85 > 64$

Acute

Acute!

b. 13, 9, 7

$a^2 + b^2$ c^2

$7^2 + 9^2$ 13^2

$49 + 81$ 169

$130 < 169$

Obtuse

Obtuse!