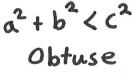
$$a^2 + b^2 = c^2$$
Right

$$a^2 + b^2 > c^2$$
Acute



Worked Examples - Pythagorean Inequality Theorems (IXL Geometry P.4)

- 1. The sides of a triangle have lengths 3, 4, and 5. What kind of triangle is 32+42=52 it?
  - a. Acute
  - b. Obtuse
  - (C.) Right

- 7+16=25
  - 25 = 25
- 2. The sides of a triangle have lengths 3, 6, and 6. What kind of triangle is it?
  - Acute
  - b. Obtuse
  - c. Right

- $3^2 + 6^2 \stackrel{?}{=} 6^2$ 32+62 >62 Acute
- 3. The sides of a triangle have lengths 10, 13, and 19. What kind of triangle is it?
  - a. Acute
  - (b) Obtuse
  - c. Right

- $10^2 + 13^2 \stackrel{?}{=} 19^2$ 100 + 169 = 361 269 < 361 Obtuse
- 4. Can the sides of a triangle have lengths of 33, 10, and 26? If so, what
- kind of triangle is it?
  - a. Yes, acute
  - b. Yes, right
  - C. Yes, obtuse
  - d. No

If 
$$a+b > c$$
, then  $\Delta$ 

If  $a+b \le c$ , then  $no \Delta$ 
 $10+26$  33  $10^2+26^2 \stackrel{?}{=} 33^2$ 
 $36 > 33$   $100+676 \stackrel{?}{=} 1089$ 

Yes,  $\Delta$  776  $< 1089$ 

Obtuse

- 5. Can the sides of a triangle have lengths of 19, 27, and 46? If so, what kind of triangle is it?
  - a. Yes, acute
  - b. Yes, right
  - c. Yes, obtuse
  - (d) No