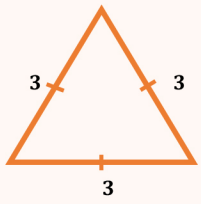
TOPIC: PYTHAGOREAN THEOREM & BASICS OF TRIANGLES

Basics of Triangles

◆ A **triangle** is a geometric shape with ___ sides. There are 3 types of triangles based on the lengths of their sides.

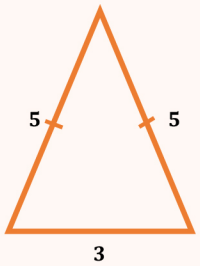
Triangles Classified by SIDES

Equilateral Triangle



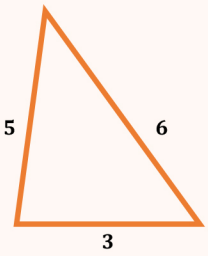
___ sides have equal length

Isosceles Triangle



___ sides have equal length

Scalene Triangle



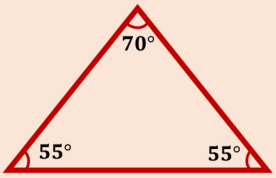
___ sides have equal length
(i.e. all sides are _____)

◆ When two triangle sides meet, they form **angles**. There are 3 more types of triangles based on their angles.

- In *any* type of triangle, all angles *ALWAYS* add up to _____ degrees.

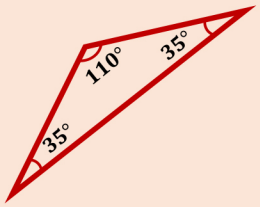
Triangles Classified by ANGLES

Acute Triangle



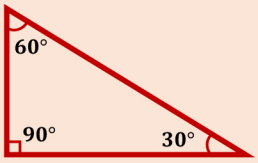
ALL angles are _____ than 90°

Obtuse Triangle



ONE angle is _____ than 90°

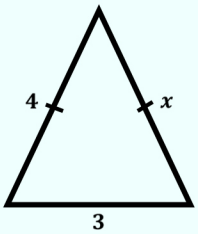
Right Triangle



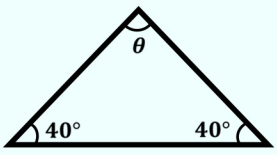
ONE angle is _____ 90°

EXAMPLE For each triangle below, find the missing angle θ or the missing side x.

(***A***)



(***B***)



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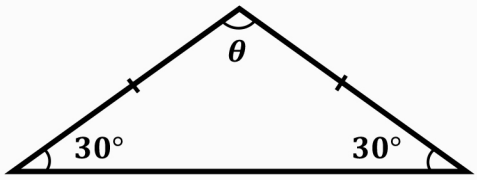
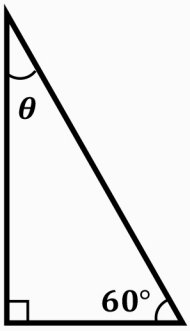
PRACTICE Classify the triangle below according to its sides and angles.

I. Equilateral
II. Isosceles
III. Scalene
IV. Acute
V. Obtuse
VI. Right



PRACTICE Find the missing angle θ for this right triangle.



TOPIC: PYTHAGOREAN THEOREM & BASICS OF TRIANGLES

Right Triangles & Pythagorean Theorem

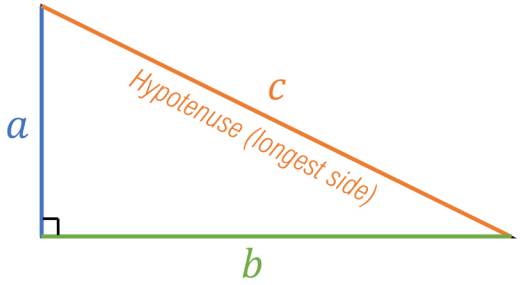
◆ Whenever 2 sides of a right triangle are known, solve for the unknown side by using the **Pythagorean Theorem**.

- ALWAYS set a and b as the _____ legs that form the 90°, and c as the _____.

New

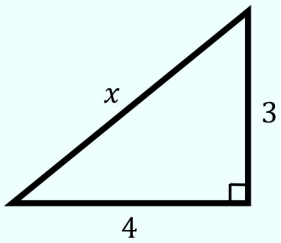
$$a^2 + b^2 = c^2$$

(Pythagorean Theorem)

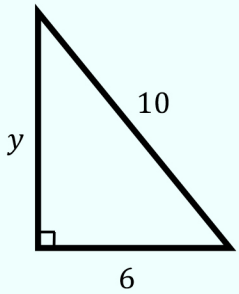


EXAMPLE Find the missing side of each right triangle below.

(***A***)



(***B***)



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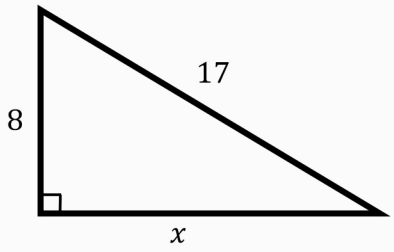
PRACTICE Calculate the missing side of the triangle below.



PRACTICE Calculate the missing side of the triangle below.