Table of Contents

Set up p. 19 for notes

Measuring Angles and Calculating Heights

Cut on ..... lines
Use tape or glue
to attach on
16-17

Triangle Toolkit

p. 16-17

All 3 sheets go on 16-17

Pythagorean Theorem	SOH CAH TOA	Special Right Triangles

fold along the solid line first, make a good crease, then cut along the dotted line.

tape/glue this on p.16-17 in your NB

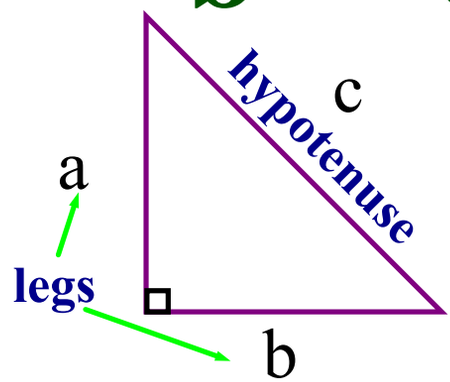
Pythagorean Theorem

When can this tool be used?

when you know 2 sides of a right triangle

Example and diagram:

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



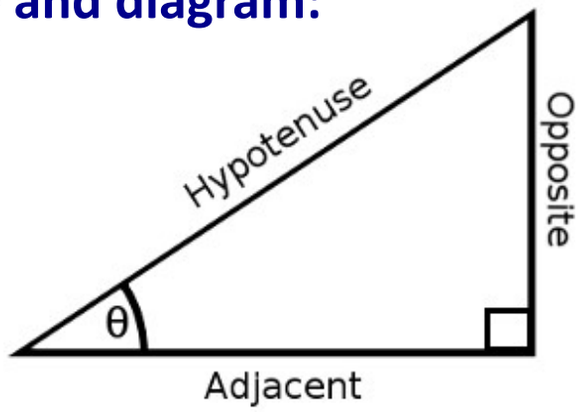
SOH
CAH
TOA

When can this tool be used?

to find angles and/or sides in right triangles

$\sin\theta = \frac{O}{H}$

Example and diagram:



SOH $\sin\theta = \frac{\text{opposite}}{\text{hypotenuse}}$

CAH $\cos\theta = \frac{\text{adjacent}}{\text{hypotenuse}}$

TOA $\tan\theta = \frac{\text{opposite}}{\text{adjacent}}$

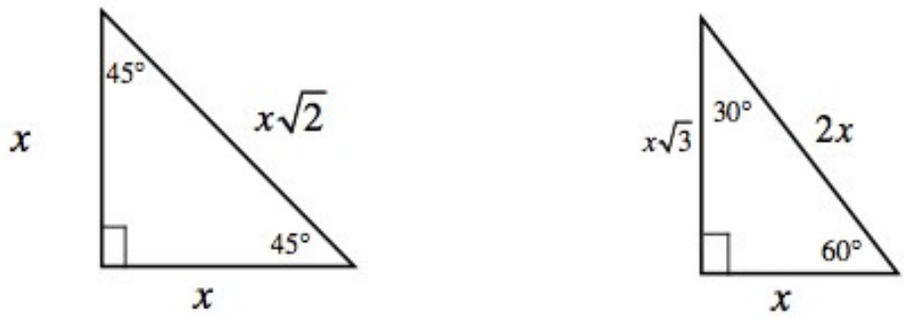
use the inverse to find the angle.

Special Right Triangles

When can this tool be used?

when you have a
30°-60°-90° triangle
or a 45°-45°-90° triangle

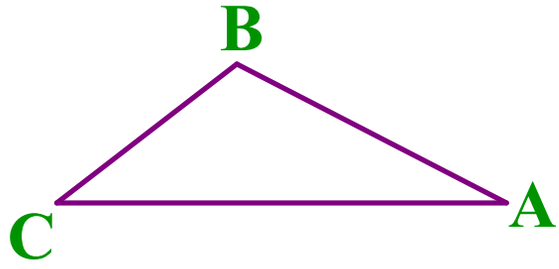
Example and diagram:



Sum of interior angles of a triangle

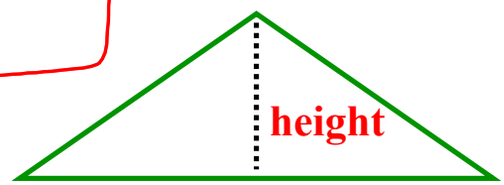
180°

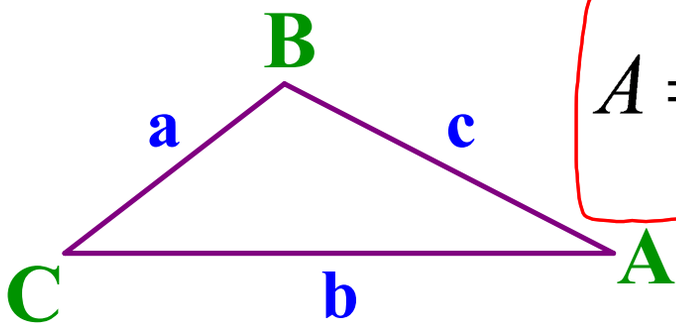
$$A + B + C = 180^\circ$$



Area of a triangle

$$A = \frac{1}{2}bh$$





$$A = \frac{1}{2}ab\sin C$$

Law of Sines

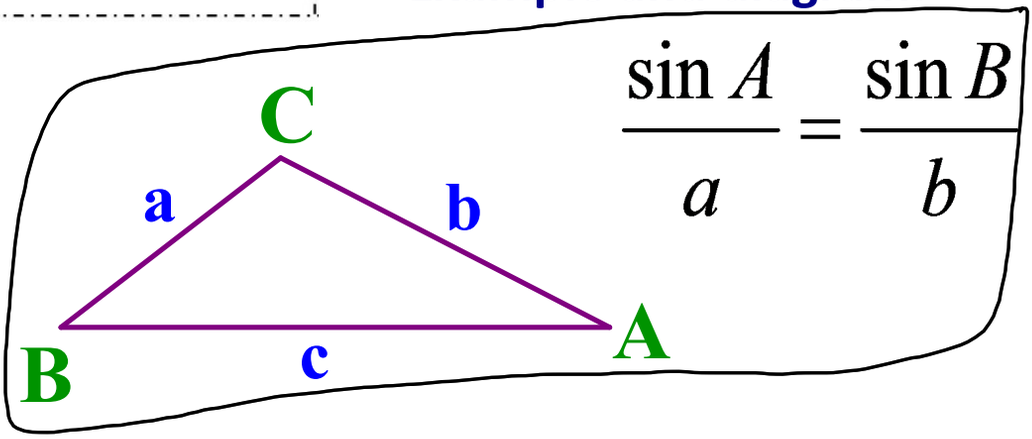
When can this tool be used?

with non-right triangles

when you know 2 sides

and a non-included angle

Example and diagram:



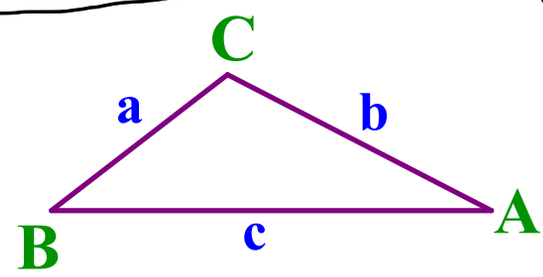
$$\frac{\sin A}{a} = \frac{\sin B}{b}$$

Law of Cosines

When can this tool be used?

with non-right triangles when you know all 3 sides or 2 sides and the included angle

Example and diagram:



$$c^2 = a^2 + b^2 - 2ab\cos C$$