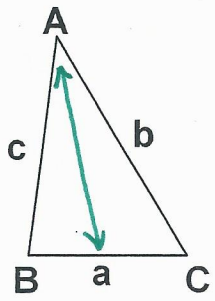
When to Use Sine & Cosine Laws

Date:



Sine Law

i) $\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$

ii) $\frac{\sin A}{a} = \frac{\sin B}{b} = \frac{\sin C}{c}$

- *use any 2 of the 3 fractions*
- ~~*place unknown in upper-left corner*~~

Cosine Law

i) $a^2 = b^2 + c^2 - 2bc\cos A$

ii) $b^2 = a^2 + c^2 - 2ac\cos B$

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

SHOW STEPS! (Rearrange!)

iv) $\cos A = \frac{b^2 + c^2 - a^2}{2bc}$ ← do not begin with.

Given

3 facts: SAA, ASA

- 1 side + 2 angles or…
- 2 sides + 1 angle SSA

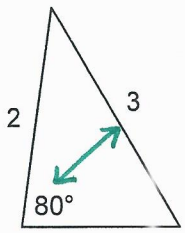
3 facts: SAS

- 2 sides + 1 angle or…
- 3 sides SSS

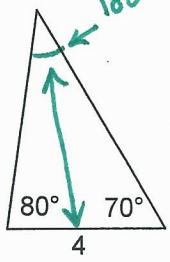
Pattern

- need one angle-side pair

Ex 1

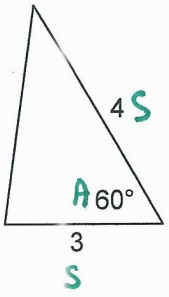


Ex 2

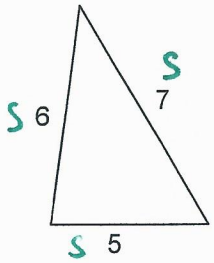


- SAS or SSS

Ex 1



Ex 2



Avoid

- do not use for R.A.T.'s
- for R.A.T.'s use

SOHCAHTOA

along with

Pythagorean Theorem.

- do not use for R.A.T.'s
- do not use when

Sine law

will work instead.