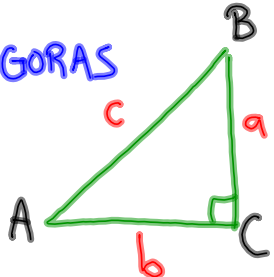


TRIGONOMETRY

Q: WHAT DO WE KNOW ABOUT RIGHT TRIANGLES ?

① ALL THE ANGLES ADD UP TO 180°
(Δ means angle)

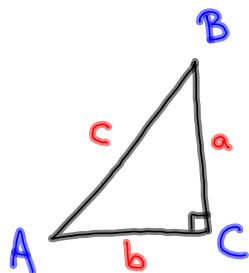
② PYTHAGORAS


$$a^2 + b^2 = c^2$$
$$\sqrt{a^2 + b^2} = c$$


③ ONE OF THE ANGLES IS 90°

LABELLING.

- ① SIDES GET LOWERCASE LETTERS. (a, b, c)
- ② ANGLES GET UPPERCASE LETTERS. (A, B, C)
- ③ SIDE GETS SAME NAME AS OPPOSITE ANGLE.



TRIG.

3 BUTTONS ON THE CALCULATOR ARE USED TO
RELATE THE ANGLES OF A  TO THE
SIDE LENGTHS.

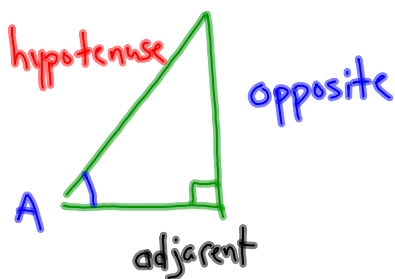
SIN

COS

TAN

HOW TO USE THE TRIG. BUTTONS.

- ① START BY IDENTIFYING THE ANGLE (\angle) YOU ARE TALKING ABOUT.
- ② LABEL THE SIDES ACCORDINGLY.



- * hypotenuse: the longest.
- opposite: opposite the angle.
- adjacent: touching the angle.

③ REMEMBER THIS WORD

SOH · CAH · TOA

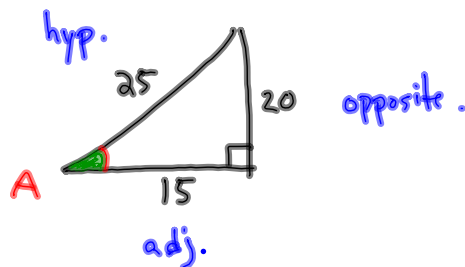
∠ : the angle.

$$\text{SOH} \rightarrow \frac{\sin \angle}{1} = \frac{\text{opposite}}{\text{hypotenuse}}$$

$$\text{CAH} \rightarrow \frac{\cos \angle}{1} = \frac{\text{adjacent}}{\text{hypotenuse}}$$

$$\text{TOA} \rightarrow \frac{\tan \angle}{1} = \frac{\text{opposite}}{\text{adjacent}}$$

Ex (1)



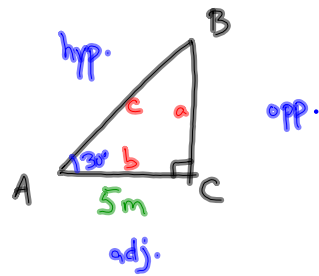
$$\tan A = ?$$

$$\rightarrow \text{TOA} \Rightarrow \frac{\tan A}{1} = \frac{\text{opposite}}{\text{adjacent}}$$

$$\tan A = \frac{20}{15} = 1.\bar{3}$$

$$\tan A = 1.\bar{3}$$

Ex 2. $\angle A = 30^\circ$
 $m \overline{AC} = 5\text{m}$
 $m \overline{BC} = ?$



FIRST:
HAVE: ADJACENT
WANT: OPPOSITE
SOH CAH **TOA**
USE TOA

$$\frac{\text{TAN } A}{1} = \frac{\text{OPPOSITE}}{\text{ADJACENT}}$$
$$\frac{\text{TAN } 30^\circ}{1} = \frac{\text{OPPOSITE}}{5}$$

$$\text{OPPOSITE} = \frac{\text{TAN } 30^\circ \times 5}{1}$$
$$= \frac{(0.5773) \times 5}{1}$$
$$= \boxed{2.887 \text{ m}}$$

FINAL ANSWER: