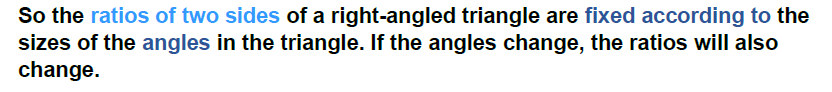
**Callum: Maths Lesson 25 January 2021 | Paper 2**

**TRIGONOMETRY**

* The study of the relationship between side lengths and angles in triangles
* There are three trigonometric functions (or ratios):
  + **Sin**e 🡪 **sin**
  + **Cos**ine 🡪 **cos**
  + **Tan**get 🡪 **tan**
* The three trig functions always work together with an angle, often represented by ), but any variable can be used to stand in for an angle.
* Each of these have a special relationship with sides of triangles relative to the angle that is being worked with. The following is a quick way to memorise these relationships.

**SOH CAH TOA**

**signs of happiness come after having tons of alcohol**



In grade 10 you will only work with right-angled triangles in trig. From grade 11 onwards you move onto triangles that are not right-angled.

**Labelling of triangles and angles**

*Note: hypotenuse is always the hypotenuse*

*(side opposite the 90 angle)*

**Practice**

Using the labels provided on the following triangles, provide the ratios for the given trig functions:

*Remember: SOH CAH TOA*

|  |  |
| --- | --- |
|  |  |

|  |  |
| --- | --- |
|  |  |

**Using the calculator to work out ratios/angles**

Write down the value of the following using your calculator, correct to two decimal places:

Determine the value of the following using your calculator, correct to two decimal places given that and

**Trig equations**

We can also get given a ratio of a trig function and we have to work out the angle. We use the shift function on the calculator to do this.

For each of the following solve for , rounding to one decimal place.

*Hint: always get the trig ratio (including its angle) by itself first before going to the calculator to find the angle!*

1. .2

**Special Triangles**

In trigonometry we have two triangles with specific angles that we refer to as ‘special angles’. These are derived from the graphed functions of trig ratios. These angles are:

These triangle are specifically for the angles

We use these to work out trigonometry expressions without the use of a calculator.

Examples: