**Special Triangles**

SOHCAHTOA or alternatively **O**h **H**ell, **A**nother **H**our, **O**f **A**lgebra, sin, cos and tan.

Equilateral triangle - Angles 30˚ and 60˚

In the equilateral triangle *abc* below, each side is 2 units in length. The perpendicular from the vertex *a* to the base gives a triangle of 90˚, 60˚ and 30˚.

*c*

√3

2

1

*b*

*a*

60˚

30˚

60˚

$sin60=\frac{√3}{2}$ $sin30=\frac{1}{2}$

$cos60=\frac{1}{2}$ $cos30=\frac{√3}{2}$

$tan60=\frac{√3}{1}$ $tan30=\frac{1}{√3}$

Isosceles triangle - Angle 45˚

The triangle below is isosceles where the equal sides are each 1 unit in length. The hypotenuse is √2 units in length.

1

1

√2

45˚

$sin45=\frac{1}{√2}$ $ $

$cos45=\frac{1}{√2} $

$tan45=\frac{1}{1 }=1 $