

## Title : Further Trigonometry

### Key Knowledge/Prior Learning KS2/3 and Retrieval and Suggested Starters

- Solving Equations
- Substitution

### KS4 National Curriculum – what students will be practicing

- Identifying and labelling the sides of a non right angled triangle (a,b,c for the sides) (A,B,C for the angles)
- Solving missing side problems using Sine rule, Cosine rule and Area of Triangle formula
- Solving missing angle problems using Sine rule, Cosine rule and Area of Triangle formula
- Finding the area using Area of Triangle formula
- Drawing and identifying co-ordinates on sin,cos and tan graphs

### Specific Ambitious Knowledge

Spotting when it is the right time to use which formula, linking this also to SOHCAHTOA and Pythagoras

### Key Vocabulary/Literacy Opportunities

- Sine
- Cosine
- Tangent
- Opposite
- Adjacent
- Hypotenuse
- Periodical
- Symmetrical
- Asymptote

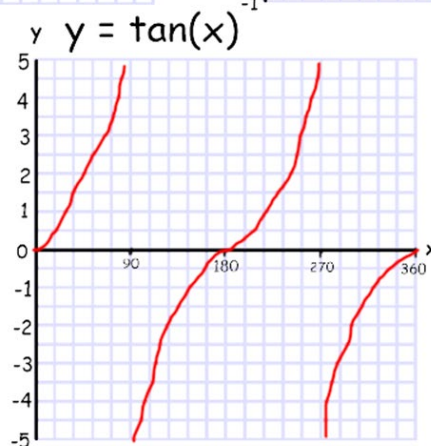
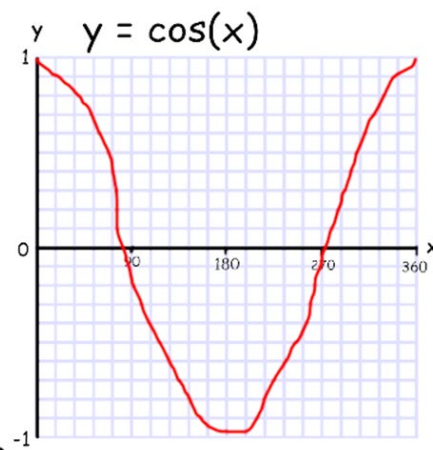
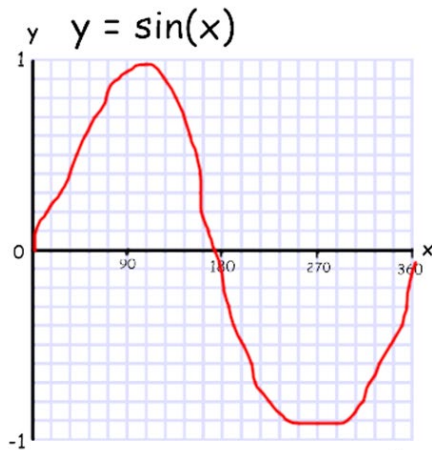
### Key Formulae/Knowledge

Sine rule  $\frac{a}{\sin A} = \frac{b}{\sin B}$  or  $\frac{\sin A}{a} = \frac{\sin B}{b}$

Cosine rule  $a^2 = b^2 + c^2 - 2bc\cos A$

Area of Triangle  $Area = \frac{1}{2}ab\sin C$

Pictures of sin,cos, tan graphs here



### Maths in Context (Historical, Real Life and Student Thinking Points)

Hipparchus of Nicaea (Ἰππάρχος, c. 190 – 120 BCE) was a Greek astronomer and mathematicians, and one of the greatest astronomers of antiquity.

Hipparchus made detailed observations of the night sky and created the first comprehensive star catalog in the western world. He is considered the father of **trigonometry**: he constructed trigonometric tables and used these to reliably predict solar eclipses. He also invented the astrolabe and solved different problems in spherical trigonometry.

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### Projects/Enrichment/Investigations

- [Where Is the Dot?](#)
- [Three Cubes](#)
- [Bendy Quad](#)
- [Hexy-metry](#)
- [Three by One](#)
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