**Math Rules**

**Factorisation:**

**For factorising a Quadratic Equation by Formula:**

**Trignometry:**

**Pythagoras Theorem:**

 **B A**

 **C**

**Trignometry of a right angled Triangle:**

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**The Sine rule:**

**A,B & C are angles**

**A,b & c are sides**

**The Sine Rule is used when:**

* **You are given ONE SIDE and TWO ANGLES, to find the missing side**
* **You are given TWO SIDES and ONE ANGLE which is not between the two sides, to find the missing angle.**

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**Examples on Sine rule:**

**1) Find X:**

**2) Find :**

**The Cosine Rule:**

**A,B & C are angles**

**A,b & c are sides**

**The Cosine Rule is used when:**

* **You are given TWO SIDES and ONE ANGLE which is between the two sides, to get the side opposite to the angle.**
* **You are given THREE SIDES, to find any angle.**

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**Examples on the Cosine Rule:**

**1) Find X:**

**2) Find :**

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**Sine Rule of the Area of a triangle:**

**A,B & C are angles**

**A,b & c are sides**

**This Rule is used when:**

* **You are given TWO SIDES and ONE ANGLE which is between the two sides.**

**Examples on the Sine Rule of Area:**

**Find the area of this shape:**

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**Sine Curve Rule:**

**Examples:**

**And so on…**

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**Example on Sine Curve rule:**

**Calculate angle given that it is obtuse.**

 **which is obtuse. We have to find the other angle which has the same sine.**

**Back Bearing:**

**If the bearing of B from A is , then the bearing of A from B {Back Bearing} is:**

**Co-ordinate Geometry and straight lines:**

**To calculate the distance between two given points:**

**To calculate the Co-ordinates of the mid-point between two given points:**

**To calculate the gradient of a straight line:**

**we must have two points on the line (X1,Y1) and (X2,Y2)**

**the gradient (m) is:**

**Matrices:**

**Multiplication of two Matrices :**

**Determinant of a Matrix:**

**Multiplicative Inverse of a Matrix (M-1):**

**NOTE: M x M-1 = Identity Martix**

 **Any matrix multiplied by its multiplicative inverse will give you the identity matrix which is:**

**Variations:**

**Direct proportion equation:**

**Y and X are the two variables and K is the constant of variation which you will be given information to find.**

**Indirect proportion equation:**

**Polygons:**

**To calculate the sum of interior angles of a regular polygon:**

**Where n is the number of sides in the polygon.**

**To calculate one interior angle of a regular polygon:**

**To calculate the one exterior angle of a regular polygon:**

**Note: the sum of exterior angles of any polygon is always 360.**