**IGCSE QUICK REVISION**

**Standard form:**

a × 10n

* Where a one digit.
* And n +ve

-ve

**Simple Interest:**

I =

Where I : Interest.

P: Amount of Money.

T: Time Yearly.

R: Rate.

**Compound Interest:**

T = P(1+R/100)n

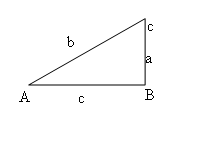
T: Total Amount of Money.

P: Amount of Money.

R: Rate.

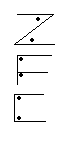
n: Time Yearly.

|  |  |  |
| --- | --- | --- |
| Shape | Area | Perimeter |
| Rec | L x W | 2(L + W) |
| Square | L x W | 4 L |
| Parallel | B x h | Sum of side |
| Trap | 1/2 (a + b)h | Sum of side |
| Kite | 1/2 D1 x D2 | Sum of side |
| Triangle | 1/2 B x h  1/2 a x b x sin t | Sum of side |
| Circle | Π r2 | 2π r |



**In a right angle triangle**

* SOH/ CAH/ TOA
* b2 = a2 + c2 (Pythagoras Therom)

**Parallel lines**

* Two alternate equal angles.
* Two corresponding equal angles.
* Two interior angles are equal to 180.

**In Circle**

* radius ┴ tangent
* 2 circular angle equal
* Central angle = 2 circles
* 2 tangent are equal
* Angle opposite Diameter = 90º
* In cyclic opposite angle = 180º
* Arc length =
* Sector area =

Volume = A x h

A = Base area.

Sum of interior = (n-2)180

Each angle in regular =

Sum of exterior = 360º

**In similarity**

* Angles equal
* Sides proportional (equal ratio)

**Direct Variation**

x y x = k y

**Inversely Variation**

x x =

**Indices**

an x am = a n+m

an ÷ am = a n-m

(an)m = anm

= 1

**Inequality**

-x < y x > -y

**Linear programming**

* Shade unrequired region after:-
* Turn inequality equation. (make y subject)
* Draw equation of (straight line).
* Shade over or under the line.

**Bearing:**

Angle measured

* From ● North ● Clock Wise

**Sine rule:**

Given angle & opposite side

**Cosine rule:**

Given 3 sides or 2 sides and angle in bet.

a2 = b2 + c2 – 2bc cos A

cos A =

**Limits of Accuracy:**

nearest ÷ 2 result ±

**Quadratic Equation:**

Correct to 2 decimal place use

X = where ax2 + bx + c = 0

**Gradient:**

* Line touches the curve at point
* Tan angle.
* Diff of y / diff of x

Equation of straight line y = mx + c

Where m = gradient , c = y intercept

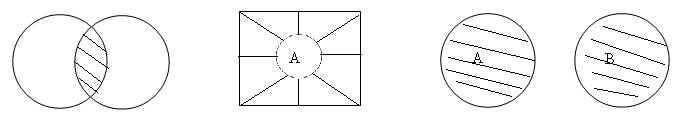
**Graphical soln:**

* Point of intersection of curve with x axis or line
* Line cut x axis y = 0
* Line cut y axis x = 0

**In a speed time graph:**

Distance = Area under graph.

Acceleration =

**Sets:**

A ∩ B Ā complement A ∪ B

1 ∈ A not A all element

1 ∈ B A ∁ δ

B ∁ ε

**In Vector:**

* If you want resultant you must start with point and end by the other.

For example:

**Column Vector:**

Start with A 3 unit in +ve x

Then 2 unit in +ve y

**Parallel Vector:**

k

**Modulus Vector:**

• Length • magnitude

If

**Function:**

* To get the inverse make x subject.
* Composed function substitute x by function.

**Matrix:**

Order R x C

M1 x M2

For multiply R1 x C1 R2 x C2

Condition C1 = R2

**Inverse of matrix:**

A =

A-1 =

AA-1 = I

I Identity

**Transformation:**

G1 the size not change

* Reflection Distance from O to Mir = Distance from I to Mir

OI ┴ Mir

* Rotation center (┴ Bisector of O & I)

Angle of rotation

Direction

* Translation column vector

G2 the size changed (scale factor)

**Enlargement**

* Scale factor
* Center fenelayment

Scale Factor =

**Shear**

* Scale factor
* Invariant line

Scale Factor =

**Stretch**

* Scale factor
* Invariant line

Scale Factor =

**Statistics**

* If histogram f.d =
* If pie chart total frequency

Data

Ungrouped grouped

Mean Middle class

Median Middle after arrange and add till you get

Mode Most repeated highest frequency class

In cumulative frequency curve:

Median = 50% of frequency

Upper quartile = 75% of frequency

Lower quartile = 25% of frequency

Inter quartile = upper – lower

**Probability**

P =

Sum of all probability = 1

For 2 events A & B

P (A and B) = P (A) x P (B)

P (A or B) = P (A) + P (B)

If we have 2 points A (x1, y1) B(x2, y2)

A B

Length of =

Mid-point = ( )

Grad =