

UPPER 2 – MAY EXAM – REVISION NOTES

Paper 1 – Non Calculator
30 minutes

Paper 2 – Calculator
1 hour

Content: Maths in Action - Book 2

1. Numbers In Action

Basic Number Operations: $+$ $-$ \div \times
Approximation – to nearest 1, 10, 100 etc.
Rounding to *Decimal Places* and *Significant Figures*.
Order of Operations – (*BEDMAS*).

Rule For Rounding

If the next figure is 5 or over,
round up.

The Order of Operations

$\times \div$ before $+$ $-$

2. All About Angles

Types of Angle; *Acute, Right-Angled, Obtuse, Straight, Reflex*.
Definitions; *Vertical, Horizontal, Parallel, Perpendicular*.
Complementary Angles (*add to give 90°*).
Supplementary Angles (*add to give 180°*).
Vertically Opposite Angles (*X angles, are equal*).
Corresponding Angles (*F angles, are equal*).
Alternate Angles (*Z angles, are equal*).

3. Letters and Numbers

Adding, Subtracting and Multiplying.
Substitution into Formula.
Calculations involving letters (*forming expressions, Lengths , Areas and Volumes*).
Multiplying out Brackets (*expanding*).

4. Making Sense of Statistics 1

Pictographs, Bar Charts, Line Graphs, Pie Charts.
Organising Data using a Tally/Frequency Table.
Tally/Frequency Table for Grouped Data.
Calculating Averages – *the Mean, Median and the Mode*.
The Range is the difference between Highest and Lowest Scores.

Mean = $\frac{\text{sum of values}}{\text{total frequency}}$

Median – middle value when
arranged in order.

Mode – most common value.

5. Fractions, Decimals and Percentages

Calculations involving Decimals.
Simplifying and finding Equivalent Fractions.
Finding Percentages.
Percentage Increase and Decrease problems (*discount and profit*).
Linking Decimals, Fractions and Percentages.

6. Distance and Directions

Scale Drawings – *making scale drawings, interpreting scale drawings*

Scale Drawings involving *angles of elevation or depression*.

Scale Drawings involving triangles.

Compass Bearings.

3 Figure Bearings.

Bearings and Scale Drawings.

3 Figure Bearings are angles measured from north in a clockwise direction, ALWAYS given in 3 figures.

7. Positive and Negative Numbers

Adding and Subtracting Positive and Negative Numbers.

Algebraic Expressions involving Positive and Negative Terms

(*example: $-2x - -3x = -2x + 3x = x$*)

Solving Equations involving Positive and Negative Terms.

Hints: Use the number line to help.

Rule:

-If signs are the same change to an ADD +.

- If signs are different change to a minus -.

8. Round in Circles

Calculating Circumference; $C = \pi d$.

Calculating Diameter; $d = C/\pi$.

Calculating Area; $A = \pi r^2$.

9. Types of Triangle

The Sum of the Angles in any Triangle = 180° .

The Area of a Triangle; $A = \frac{1}{2}bh$.

Isosceles Triangles: One Axis of Symmetry.

Two Equal Sides.

Two Equal Angles.

Equilateral Triangles: Three Equal Sides.

Three Equal Angles.

Each Angle = 60° .

It has 3 Axis of Symmetry.

Types of Triangle – *Right-Angled, Isosceles, Equilateral, Acute-Angled, Obtuse-Angled, Scalene.*

Drawing Triangles using Ruler, Protractor and Compass.

10. Metric Measure

Measuring Length, units: *mm, cm, m, km.*

Converting between different units.

Measuring Area, units: *mm², cm², m², hectares, km²*

Measuring Volume, units: *mm³, cm³, m³.*

Measuring Capacity, units: *ml, Litres.*

Converting between Volumes and Capacities.

Measuring Weight, units: *mg, g, kg, tonnes.*

mm cm m km

1 hectare = 100m x 100m = 10000m²

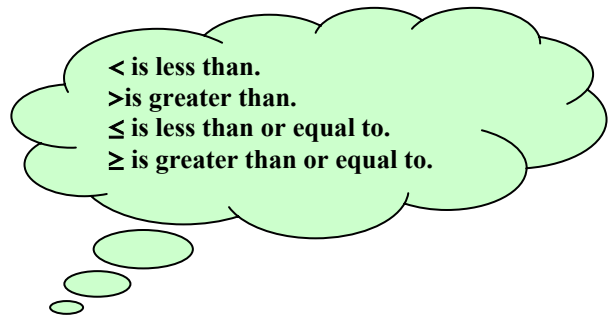
1 Litre = 1000cm³ = 1000ml.

1cm³ = 1ml.

mg g kg tonnes

11. Equations and Inequations

Solving Equations using the *Balance Method*.
Forming and Solving Equations from pictures.
Solving Equations with Brackets.
Solving Word Problems.
Solving Inequations.



12. Ratio and Proportion

Ratio; a method of dividing something up.
Equivalent Ratios. Simplest Form.
Ratios in form $l:n$ or $n:l$.
Scale; a special ratio.
Direct Proportion, and Direct Proportion Graphs.
Inverse Proportion and Inverse Proportion Graphs.

13. Making Sense of Statistics 2

Using Frequency Tables to Collect and Organise Data.
Using Frequency Tables to calculate the *mean, median and mode*.
Frequency Diagrams and Frequency Polygons.
Using *Class Intervals* in Frequency Tables for lots of data.
Scatter Diagrams – *positive and negative relationships, no relationships, line of best fit*.

14. Kinds of Quadrilateral

Revision – The Square and Rectangle.
The Kite: One Axis of Symmetry.
The Rhombus: Two Axis of Symmetry.
All Sides are Equal.
Opposite Angles are Equal.
Opposite Sides are Parallel.
The Diagonals *bisect* each other at right-angles.
The Parallelogram: The Opposite Sides are Equal and Parallel.
The Opposite Angles are Equal.
The Trapezium: One Pair of Parallel Sides.
How to *bisect* a line and an angle.

15. Some Special Numbers

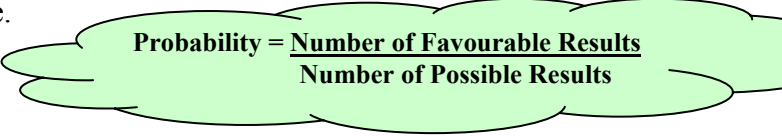
Powers and Indices.
Squares and Square Roots.
Multiples – (*Least*) *Common Multiple(s)*.
Factors – *Common Factors*.
Prime Numbers and Prime Factors (*using the Factor Tree*).
Using Prime Factors to find the Lowest Common Multiple (lcm).

16. Formula and Sequences

Making and using Formula.

Constructing a Formula to describe a Sequence (*the nth term*).

Using the Formula to continue the Sequence.


$$\text{Probability} = \frac{\text{Number of Favourable Results}}{\text{Number of Possible Results}}$$

17. Probability

Probability – how much chance an event will occur.

Probability is always a number between 0 and 1.

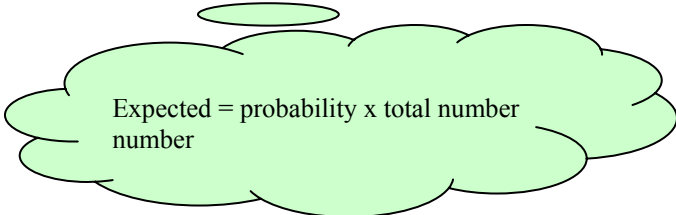
Possible Results = how many different events can occur.

Favourable Results = how many results are you interested in.

Using Tree Diagrams.

Estimating and Calculating Probability.

Expectation.


$$\text{Expected} = \text{probability} \times \text{total number number}$$
