Year 9 Summer Revision List 2024

Mathematics Department

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PRE-CHRISTMAS TOPICS 1 - 4

TOPIC 1 Number Review

- List the multiples and factors of a given number
- Define a prime number and list the first 10 primes
- Calculate HCF and LCM of two numbers from a list
- Recall the square numbers up to 12 x 12 and the cube of 2, 3, 4, 5 and 10
- Calculate the square root and cube root of a given number
- Use index notation
- Add, subtract, multiply and divide negative numbers
- Use order of operations
- Express a number as a product of its primes and calculate HCF/LCM using primes

TOPIC 2 The Calculator

- Round a number to a given number of decimal places
- Use the different functions of a calculator to include brackets, powers, roots, negatives, fractions

TOPIC 3 - Percentages

- Convert between fractions, decimals and percentages
- Express one number as a percentage of another
- Calculate the percentage of an amount (using decimal multiplier)
- Increase and decrease an amount by a given percentage (using decimal multiplier)
- Calculate compound interest
- Calculate the original quantity given the result of a percentage change

TOPIC 4 - Fractions

- Write a fraction in its simplest form
- Write one number as a fraction of another
- Calculate a fraction of an amount
- Compare the size of a fraction using a common denominator
- Add and subtract fractions with different denominator.
- Multiply and divide fractions
- Convert between mixed number and improper fractions
- Add, subtract and divide fractions involving mixed numbers

POST-CHRISTMAS TOPICS 5-11

TOPIC 5 Basic Algebra

- Simplify an algebraic expression by collecting like terms
- Multiply out single brackets
- Solve simple linear equations
- Substitute given numerical values into expressions
- Multiply out and simplify two single linear brackets
- Factorise a simple expression

TOPIC 6 Straight Line Graphs

- Plot and label co-ordinates in all four quadrants
- Draw and label horizontal and vertical lines on a co-ordinate axis
- Draw and label the lines y = x and y = -x
- Read and interpret conversion graphs
- Draw y = mx + c lines using the method of substituting into a table to derive co-ordinates
- Write down the gradient and y-intercept from the equation of a straight where y is the subject
- Recognise that lines are parallel from the equation of a straight line

TOPIC 7 Sequences

- Find the next term in the sequence
- Find missing terms in a sequence
- Use the given terms of a sequence to find the rule for the sequence
- Generate a sequence when given the rule and the first term
- Continue a sequence derived from diagrams
- Find the formula for the n^{th} term of a sequence
- Use the n^{th} term formula to generate terms of a sequence
- Determine whether a number is a term of a given sequence

TOPIC 8 Statistical Measure

- Calculate the mean, range and mode from a list of discrete data
- Calculate the median from a list of discrete data with an odd or even number of values
- Compare two sets of data using averages and range
- Interpret and analyse discrete data from a table or graph
- Calculate missing value(s) from a given average

TOPIC 9 Statistical Representation

- Read, interpret and complete two-way tables
- Construct a grouped frequency table
- Draw a pie chart from a given frequency table
- Draw a scatter graph from a table
- Recognise types of correlation in a scatter graph
- Read values from a given scatter
- Construct a grouped frequency table
- Measure and use the angle of a pie chart
- Identify how similar graphs can be misleading

TOPIC 10 Probability

- Use appropriate vocabulary to describe the likelihood of an event occurring
- Recognise that 0 and 1 are the limits of the probability scale and that all probabilities lie between 0 and 1 inclusive
- Calculate the probability of a single event occurring in cases where all possible outcomes are equally likely
- Calculate the probability of a complimentary event
- List all possible outcomes for given events
- Calculate the probability of two independent events occurring, from a given sample space
- Calculate the number of times an event is likely to occur, given the probability and the number of trials
- Calculate the probability of two independent events occurring

TOPIC 11 Perimeter and Area

- Calculate the perimeter of regular shapes with some missing but attainable sides
- Calculate the perimeter of compound shapes with some missing but attainable sides
- Calculate the area of a square and rectangle
- Calculate the area of a triangle
- Calculate the area of a parallelogram
- Convert between metric units of length
- Calculate the area of a trapezium
- Calculate the area of a compound shape made from squares, rectangles and right-angled triangles with missing but attainable sides
- Find the length of a side of a square, given the area
- Find the length of a side of a rectangle, given the area and another side.
- Calculate the missing side of a right-angled triangle when given the area and one of the perpendicular sides