

Mathematics 2018 – 2019

Scheme of Work / Term wise syllabus breakup

Class 11

KEY: Text in red indicates new assessment objectives added as per CIE syllabus 2018-2020

Sub-objectives have been highlighted in blue

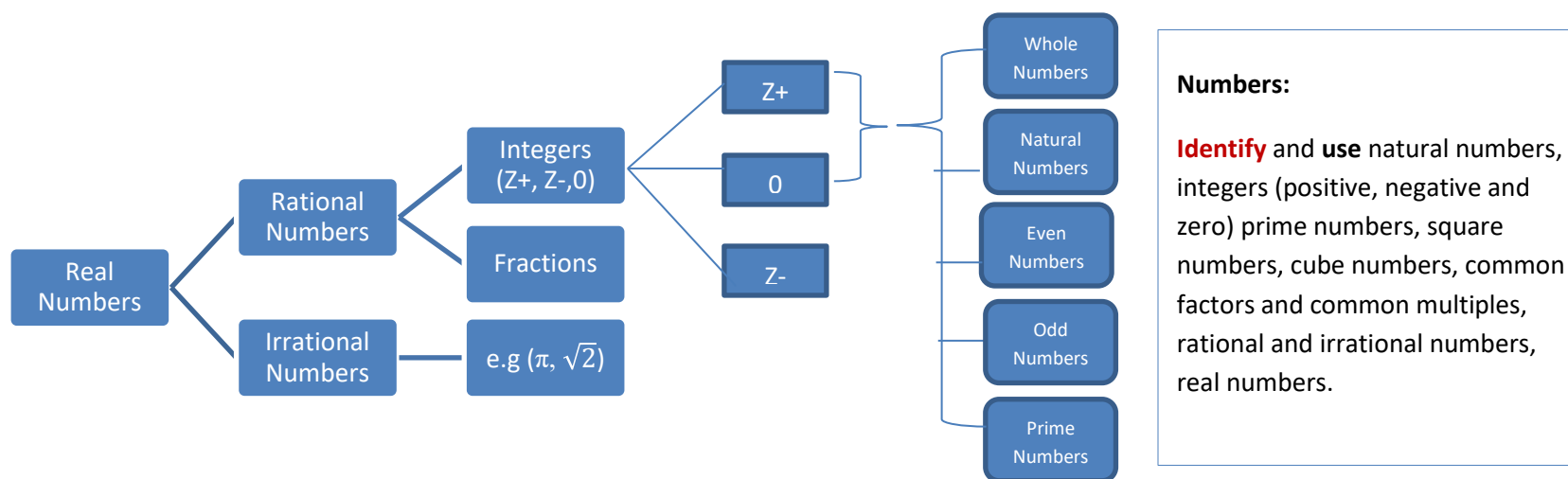


Use of an electronic calculator:

All candidates should have a silent electronic calculator. A scientific calculator with trigonometric functions is strongly recommended for P2

- use a calculator efficiently
- apply appropriate checks of accuracy
- enter a range of measures including time
e.g. enter 2 hours 30 minutes as 2.5 hours
- interpret the calculator display appropriately
e.g. in money 4.8 means \$ 4.80; in time 3.25 means 3 hours 15 minutes

Real Number Flow Chart



Term 1

<u>Strand</u>	<u>Unit</u>	<u>Topic</u>	<u>Objectives</u>	<u>Time</u>
Number Theory and Arithmetic	Sequences	Number sequence/ patterns	<ul style="list-style-type: none"> continue a given number sequence <i>[Includes linear sequences, quadratic and cubic sequences, exponential sequences and simple combinations of these]</i> recognize patterns in sequences and relationships between different sequences generalize sequences as simple algebraic statements <i>[Including expressions for the nth term]</i> 	2 weeks
Geometry and Measurements	Loci	<ul style="list-style-type: none"> Loci in 2D Intersection of Loci 	<ul style="list-style-type: none"> use the following loci and the method of intersecting loci for sets of points in two dimensions which are: <ul style="list-style-type: none"> a) at a given distance from a given point b) at a given distance from a given straight line c) equidistant from two given points d) equidistant from two given intersecting straight lines (3D locus is excluded) 	2 weeks
	Transformation	<ul style="list-style-type: none"> reflection (M) rotation (R) translation (T) enlargement (E) and combinations of transformations 	<ul style="list-style-type: none"> use the following transformations of the plane: reflection (M), rotation (R), translation (T), enlargement (E) and their combinations <i>[If $M(a) = b$ and $R(b) = c$ the notation $RM(a) = c$ will be used. Invariants under these transformations may be assumed]</i> identify and give precise descriptions of transformations connecting given figures describe transformations using coordinates and matrices (singular matrices are excluded) 	2 weeks

	Vectors	<p>Vectors in two dimensions</p> <ul style="list-style-type: none"> • representation • parallel and equal vectors • negative and zero vectors • coplanar vectors • column vectors • magnitude of a vector • position vectors 	<ul style="list-style-type: none"> • describe a translation by using a vector represented by $\begin{pmatrix} x \\ y \end{pmatrix}$, \overrightarrow{AB} or a [Vectors will be printed as \overrightarrow{AB} or a and their magnitudes denoted by modulus signs, e.g. AB or a] • add and subtract vectors • multiply a vector by a scalar • calculate the magnitude of a vector $\begin{pmatrix} x \\ y \end{pmatrix}$ as $\sqrt{x^2 + y^2}$ • represent vectors by directed line segments • use the sum and difference of two vectors to express given vectors in terms of two coplanar vectors • use position vectors [In their answers to questions candidates are expected to indicate a in some definite way, e.g. by an arrow \overrightarrow{AB} or by underlining as follows <u>a</u>. 	2 weeks
Probability and Statistics	Probability	<ul style="list-style-type: none"> • introduction • sample space • possibility diagrams • tree diagrams • scatter diagram • adding and multiplying probabilities 	<ul style="list-style-type: none"> • calculate the probability of a single event as either a fraction or a decimal [Probabilities should not be given as ratios. Problems could be set involving extracting information from tables or graphs.] • understand that the probability of an event occurring = 1 and the probability of the event not occurring is 0 [e.g. $P(\text{blue}) = 0.8$, find $P(\text{not blue})$] • understand relative frequency as an estimate of probability e.g. use results of experiments with a spinner to estimate the probability of a given outcome e.g. use probability to estimate from a population • calculate the probability of simple combined events using possibility diagrams and tree diagrams where appropriate. [In possibility diagrams outcomes will be represented by points on a grid and in tree diagrams outcomes will be written at the end of branches and probabilities by the side of the branches] 	3 weeks

			<ul style="list-style-type: none"> construct and interpret scatter diagrams understand what is meant by positive, negative and zero correlation with reference to a scatter diagram draw a straight line of best fit by eye 	
Number Theory and Arithmetic		<ul style="list-style-type: none"> compound interest 	<ul style="list-style-type: none"> use given data to solve problems compound interest <p>knowledge of compound interest formula given below is required:</p> <p>Value of investment = $P = \left[1 + \frac{r}{100}\right]^n$</p> <p>Where P is the amount invested, r is the percentage rate of interest and n is the number of years of compound interest.</p>	1 week
Revision				2 weeks
Total number of weeks				14 weeks