

Form One Term III Topics and Objectives

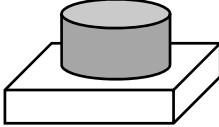
TOPIC	OBJECTIVE
	Review of examination scripts (Term II 2017/2018)
Areas and Volumes	➤ To calculate the areas and volumes of regular shapes
Symmetry	➤ To determine the number lines of symmetry of different shapes
Coordinate Geometry	➤ To explore the Cartesian plane and define quadrilateral properties from the knowledge of the Cartesian plane
Simple Interest	➤ To calculate either simple interest, principal, rate or time on an investment given three out of the four variables
	➤
	➤
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	➤

Form Two Term III Topics and Objectives
REVIEW OF TERM II TEST PAPER
<p>Line Symmetry</p> <ul style="list-style-type: none"> • Definition of line symmetry. • Examples and non-examples of plane shapes that may have line symmetry. <p>Square, Rectangle, Rhombus, Parallelogram and other n-sided regular polygons where $n \leq 8$.</p>
<p>Transformations-Reflections</p> <ul style="list-style-type: none"> • Lateral Inversion • Mirror line • Object distance = Image distance • Examples & Non-examples of Reflections on the Cartesian Plane
<p>Transformations-Reflections</p> <ul style="list-style-type: none"> • Invariant points. • Constructing the mirror line when both image and object are given. <p>Perpendicular bisector of AA', OR Joining midpoints of AA' and BB'.</p> <ul style="list-style-type: none"> • Properties of a reflection.

CIRCLES
<ul style="list-style-type: none"> • Construction a circle. • Properties of a circle: <p>-centre, radius, diameter, circumference, chord and arc.</p> <p>-Major & minor sector</p> <ul style="list-style-type: none"> • $\pi \approx \frac{22}{7}$. • Length of Circumference $C = 2\pi r = d\pi$ • Length of arcs with angles of 30°, 45°, 60°, 90°, 120° and 150°. <p>Arc length = $\frac{\text{angle}}{360^\circ} \times 2\pi r$ Arc length = $\frac{\text{angle}}{360^\circ} \times d\pi$ Perimeter of sectors & composite shapes.</p>
CIRCLES
<ul style="list-style-type: none"> • Area of a circle; $A = \pi r^2$ • Area of sector <p>$Area = \frac{\text{angle}}{360^\circ} \times \pi r^2$ $Area = \frac{\text{angle}}{360^\circ} \times \frac{\pi d^2}{4}$ (with angles of 30°, 45°, 60°, 90°, 120° and</p>

150°)
<ul style="list-style-type: none"> • Area of composite shapes.
CIRCLES
Worksheet/Exercises from text
<p>Transformations-Rotation</p> <ul style="list-style-type: none"> • Plane shapes with rotational symmetry. • Order of rotational symmetry.
<p>Transformations Rotation</p> <ul style="list-style-type: none"> • Rotation of simple plane shapes (triangles) about any point on the Cartesian plane. • Properties of Object and Image
<p>Transformations- Rotation</p> <ul style="list-style-type: none"> • Location of centre of rotation by construction. • Determining the angle and direction of rotation by construction.
<p>Transformations- Rotation</p> <ul style="list-style-type: none"> • Practice questions <p>-Draw image, given object. -Draw object given image. -Finding centre, angle & direction of rotation, given Object & Image.</p> <ul style="list-style-type: none"> • Eg. ΔABC is mapped onto $\Delta A'B'C'$ by a clockwise rotation, through an angle of 90°, about the point (2, -1).
<p>Transformations</p> <ul style="list-style-type: none"> • Determining the type of

transformation and description when object and image are given. Type may be either Translation, Reflection, Enlargement or Rotation.
1st COURSEWORK EXAMINATION (15 %) Circles, Symmetry & Transformations
TRAVEL GRAPHS <ul style="list-style-type: none"> Distance/Time graphs Scales/Unit fractions & divisions Captions & Labels Units – kmh^{-1} & ms^{-1}
TRAVEL GRAPHS <ul style="list-style-type: none"> Drawing a Distance/Time graph Graphing a journey for given data.
TRAVEL GRAPHS <ul style="list-style-type: none"> Obtaining information from Distance/Time graphs; Distance covered for part or whole journey. Time taken to cover part or whole journey. Speed – calculation and conversion from kmh^{-1} to ms^{-1}.
TRAVEL GRAPHS <ul style="list-style-type: none"> Calculation of Speed, Distance & Time using, $Speed = \frac{Distance}{Time}$

<ul style="list-style-type: none"> Calculation of Average Speed using, $Average\ Speed = \frac{Total\ Distance}{Total\ Time}$ Journeys with different constant speeds.
TRAVEL GRAPHS <ul style="list-style-type: none"> Graphs of two or more different journeys on the same pair of axes. Distance between two vehicles at a given time. Time at which a vehicle is at a given position (distance).
Worksheet/Exercises from text
VOLUME <ul style="list-style-type: none"> Cubes, Cuboids; $V = s^3$, $V = l \times b \times h$ Solids (Prisms) with a uniform (regular or irregular) cross-section;
VOLUME <ul style="list-style-type: none"> Volume of compound solids. eg: 
VOLUME Review Questions.(Text & Worksheet)
SET THEORY <ul style="list-style-type: none"> Definition of a set.

<ul style="list-style-type: none"> Set Notation; $\{ \quad \}, \{ \}, \phi, \in, \notin$ Universal Set, \cup. Finite sets, Infinite sets Equal sets, Equivalent sets. Empty set, Disjoint sets. Complement of a set A denoted by A' .
SET THEORY <ul style="list-style-type: none"> Venn Diagrams with two sets. Union of two sets. $A \cup B$ Intersection of two sets. $A \cap B$ Formulae; $n(A \cup B) = n(A) + n(B) - n(A \cap B)$ $n(\cup) = n(A \cup B) + n(A \cup B)'$
SET THEORY <ul style="list-style-type: none"> Proper & Improper Subsets. $\subset \supset \subseteq \supseteq$ <ul style="list-style-type: none"> Total number of subsets in a set A. If $n(A) = x$, then number of subsets in set $A = 2^x$.
SET THEORY Review Questions.
COORDINATE GEOMETRY <ul style="list-style-type: none"> The equation of a straight line. Plotting the graph of a straight line. The gradient of a straight line.
COORDINATE GEOMETRY <ul style="list-style-type: none"> Parallel lines; equal gradient.

<ul style="list-style-type: none"> Equation of lines parallel to the axes. Parallel lines on the Cartesian Plane.
<p align="center">COORDINATE GEOMETRY</p> <ul style="list-style-type: none"> Simultaneous Equations Solution of Simultaneous Equations by a graphical method.
<p align="center">HOLIDAY – INDIAN ARRIVAL DAY</p>
<p align="center">HOLIDAY – CORPUS CHRISTI</p>
<p align="center">COORDINATE GEOMETRY</p> <ul style="list-style-type: none"> Review Questions (text an worksheet)
<p align="center">2nd COURSEWORK EXAMINATION (15 %)</p> <p align="center">Travel Graphs, Volume & Set Theory</p>
<p align="center">TRIGONOMETRY</p> <ul style="list-style-type: none"> Investigating relationships between angles and ratios of sides of right-angled triangles. Tangent of an angle

<ul style="list-style-type: none"> Using the tangent tables.
<p align="center">TRIGONOMETRY</p> <ul style="list-style-type: none"> Using the tangent ratio to solve problems.
<p align="center">TRIGONOMETRY</p> <ul style="list-style-type: none"> The Sine ratio. The Sine tables. Using the Sine ratio to solve problems
<p align="center">TRIGONOMETRY</p> <ul style="list-style-type: none"> The Cosine ratio. The Cosine tables. Using the Cosine ratio to solve problems. Review Questions
<p align="center">INEQUALITIES</p> <ul style="list-style-type: none"> Symbols $<$, \leq, $>$, \geq Illustration of inequality on the number line.

<p>Eg. $x < 4$, $x \leq -3$, $x > -2$, $x \geq 5$</p> <ul style="list-style-type: none"> Solving inequalities. $2x + 5 < 11$, $4 - 3x \geq 10$
<p align="center">INEQUALITIES</p> <ul style="list-style-type: none"> Solving pairs of inequalities. $2x - 1 < 3$ and $2x + 1 \geq -5$ Solving combined inequalities. $x - 2 < 2x + 1 < 3$
<ul style="list-style-type: none"> Review questions (text & Worksheet)