

UNIT 10, GEOMETRY AND TRIGONOMETRY, 1.4, 5.2 – 5.5

Week: 51 – 5, Chapters 12, 14 and 15

Aim:

To develop knowledge of geometric and trigonometric techniques and strategies to be able to apply them to solve geometrical problems in two and three dimensions.

Objective:

PYTHAGORAS THEOREM

- To apply Pythagoras Theorem on geometrical problems.
- Understand that Pythagoras Theorem only can be applied on right angled triangles, to find lengths of sides.
- To understand how to apply Pythagoras Theorem on isosceles triangles.
- To use Pythagoras Theorem to state whether a triangle is right angled or not.
- To apply Pythagoras Theorem also on three dimensional problems.

PERIMETER

- To calculate the perimeter of different shapes in problems.
- Convert between mm, cm, m and km.

AREA

- To calculate area of two dimensional shapes in problems.
- To calculate surface area on different shapes.
- Know what units to use when calculating areas.
- Convert between different area units and to understand the difficulties and the reason for being careful.

VOLUME

- To calculate the volume of different three dimensional shapes in problems, such as Cuboid, Prism, Pyramid, Cylinder, Sphere, Hemisphere, Cone
- Use the correct formula when calculating volume of different shapes.
- Know what unit to use when calculating volumes.
- Convert between different volume units and to understand the difficulties and the reason for being careful.

TRIGONOMETRY

- Know how to apply "SOH CAH TOA" on right angled problems to find size of angle and/or length of sides.
- Apply "SOH CAH TOA" on both two and three dimensional problems.

- Calculate the area of a triangle using $A = \frac{1}{2}ab\sin C$.

- Use the cosine rule for non-right angled triangles.
- Know when to use the formula for the cosine rule.

- Use the sine rule for non-right angled triangles.
- Know when to use the formula for the sine rule.

- Apply sine- and cosine rules, SOH CAH TOA and Pythagoras on more complicated problems.

TOK links:

Do the angles in a triangle always add up to 180 degrees?

ATL

Work on geometrical problems, to find what we need to learn.

Do investigation to find the formula for area of a triangle.

Connect to differentiation.

Videos.

Assessment

Formative by test tests and quiz.

Summative in final exam.