

Lesson Plan – June 15th – 30th

Group: 12th

Subject: Mathematics

Topic: Relations and Functions II (Chapter 23), Inverse Trigonometric Functions (Chapter 24)

Date: June 15th – June 30th 2020

Instructional Objectives:

Relations and Functions II:

- Briefly revisit the definition and properties of relations and functions*
- Understand and identify different types of relations
- Understand and identify different types of functions
- Identify functions from their graphical representation*
- Revisit composite functions $f \circ g(x) = f(g(x))$ *
- Find the inverse of a function $f^{-1}(x)$ *
- Understand the definition of a Binary operation and determine if a given operation is binary

Inverse Trigonometric Functions:

- Understand the meaning of inverse trigonometric functions and define their domain and range
- Learn various properties of inverse trigonometric functions and use these properties to evaluate, simplify and prove equations involving these functions

Teaching Process:

Background Context:

Basics of Relations and Functions and detailed handling of Trigonometric functions has already been done last year, as part of Book 1.

Teaching:

With the mixed-mode learning of offline work and online classes, the student will be assigned work to read up and solve, before coming to class. Challenging problems and specific doubts will be cleared during the online classes.

Zoom will be used for online classes. Windows Paint, along with a touchscreen will be used as a whiteboard to solve ad hoc problems and questions. For more detailed working out (e.g. proving a multi-step inverse trigonometric identity), information will be typed out in MS Word or Powerpoint and shared with the student during online class, or via email.

Inverse Trigonometric Functions requires a revisit of trigonometric functions and their graphs. This will be handled both graphically and algebraically.

Resources required:

Textbooks:

- The NIOS Mathematics Textbook 2 for Senior Secondary classes will be used as the main textbook
- ISC Mathematics Book II, for Class XII (O.P. Malhotra et. al.) will be used as an additional reference by the teacher for problems

Software Tools:

- Geogebra will be used to graphically show trigonometric and inverse trigonometric functions and to explain the concept of principal value.

Evaluation tools:

Understanding of the topic will be evaluated through classroom interactions, homework corrections and a written test at the end of the topic

Modifications: Special Needs

Not required for the student this year

Suggestions:

None

Self-Reflection:

To be filled post-lesson, for the teacher's reference.