

Summary

Following concepts are learnt from this lecture.

- A rational function is the one which is the quotient of two polynomials.
- Indefinite integral of the rational function is accomplished by any of the following method.
 - I. Polynomial division.
 - II. Partial fraction expression.
 - III. Term by term integration.

- Following are the properties of definite integrals

$$\text{I. } \int_a^b f(x)dx = -\int_b^a f(x)dx$$

$$\text{II. } \int_a^b f(x)dx = \int_a^b f(u)du$$

$$\text{III. } \int_0^a f(x)dx = \int_0^a f(a-x)dx$$

$$\text{IV. } \int_a^b f(x)dx = \int_a^b f(a+b-x)dx$$