Unit 5: Factorization

Overview

Factorization:

The process of expressing an algebraic expression in terms of its factors is called factorization.

Remainder Theorem:

If a polynomial $p(x)$ is divided by a linear divisor $(x-a)$, then the remainder is $p(a)$.

Zero of a Polynomial:

If a specific number $x=a$ is substituted for the variable x in a polynomial $p(x)$ so that the value $p(a)$ is zero, then $x=a$ is called a zero of the polynomial $p(x)$.

Factor Theorem:

The polynomial $(x-a)$ is a factor of the polynomial $p(x)$ if and only if $p(a)=0$.

Rational Root Theorem:

Let $a_0x^n+a_1x^{n-1}+\ldots+a_{n-1}x+a_n=0,\ a_0\neq 0$ be a polynomial equation of degree n with integral coefficients. If $\frac{p}{q}$ is a rational root (expressed in lowest terms) of the equation, then p is a factor of the constant term a_n and q is a factor of the leading coefficient a_0.

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Report any mistake at freeilm786@gmail.com