Class Discussion

Unit 2 Topic 3 Part 1 The Quest of Zeroes

Objectives:

1. Find the zeroes of a polynomial equation

2. Factor theorem and Remainder theorem

3. Review of long division method for a polynomial

Factor Theorem:

If $(x-a)$ is a factor of $f(x)$ then $f(a)=0$

Remainder Theorem:

The remainder of $f(x)\div(x-a)$ is $r=f(a)$

Ex1: let $f(x)=x^4-5x^3+3x^2+x-2$, use long division to find $f(x)\div(x^2+2)$

Ex2: Assume that $f(x)=6x^3+ax^2+bx+8$. If $(x-1)$ is a factor of $f(x)$ and the remainder of $f(x)\div(x-2)$ is 26.

(1) find $f(x)$

(2) what is the remainder of $f(x)\div(x-3)$

(3) find $f(x)\div(x^2+1)$