Class Discussion

Unit 7 Topic 3 Part 2 Partial Fraction Decomposition

Objective: students need to know how to write decomposition of factor with multiplicity >1, as well as $\deg(N) \geq \deg(D)$

1. if $\deg(N) \geq \deg(D)$, then $\frac{N}{D} = Q + \frac{R}{D}$, only PFD $\frac{R}{D}$

2. PFD terms for

(a) linear D(x) factors: $\frac{a_1}{px+q} + \frac{a_2}{(px+q)^2} + \ldots + \frac{a_m}{(px+q)^m}$

(b) quadratic D(x) factors: $\frac{b_1 x + c_1}{mx^2 + nx + p} + \frac{b_2 x + c_2}{(mx^2 + nx + p)^2} \ldots$

Ex 1:Rewrite each fraction in the form of PFD

(a) $\frac{2x+5}{2x^2 + x - 3}$ (b) $\frac{x^2 + x + 1}{(x-1)(x+1)^3}$

EX 2: Find the PDF of each question in Ex1