A Book of Abstract Algebra | (2nd Edition)

Chapter 24, Problem 3EI

Bookmark

Show all steps: ON

Problem

Let A be an integral domain. By the closing part of Chapter 20, every integral domain can be extended to a "field of quotients." Thus, $A[x]$ can be extended to a field of polynomial quotients, which is denoted by $A(x)$. Note that $A(x)$ consists of all the fractions $a(x)/b(x)$ for $a(x)$ and $b(x) \neq 0$ in $A[x]$, and these fractions are added, subtracted, multiplied, and divided in the customary way.

If A and B are integral domains and $h : A \to B$ is an isomorphism, prove that h determines an isomorphism $\bar{h} : A(x) \to B(x)$.

Step-by-step solution

There is no solution to this problem yet.

Get help from a Chegg subject expert.

Ask an expert