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Chapter 24, Problem 2ED

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Problem

In each of the following, let *A* be an integral domain:

Use part 1 to give an example of an infinite integral domain with finite characteristic.

Step-by-step solution

Step 1 of 1

Let $A =$ $_5$, $_5$ is an integral domain and has characteristic 5, then $_5[x]$ has characteristic 5. $_5[x]$ is an infinite integral domain because the elements $1, x, x^2, x^3, ...$ are all distinct and any element $a_0 + xa_1 + ... + a_n x^n \in$ $_5[x]$ where $a_0, a_1, ..., a_n \in$ $_5$

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