



example of PID

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Important examples of principal ideal domains:

- The ring of the integers \mathbb{Z} .
- The ring of polynomials in one variable over a field, i.e. a ring of the form $\mathbb{F}[X]$, where \mathbb{F} is a field. Note that the ring of polynomials in more than one variable over a field is never a PID.

Both of these examples are actually examples of Euclidean rings, which are always PIDs. There are, however, more complicated examples of PIDs which are not Euclidean rings.