Exercise 5.14. [203] *Consider the property*

$$\forall x, y \in A\ ,\ x \cdot y = 0 \Rightarrow x = 0 \vee y = 0$$

this property may be false in a ring A; if it holds in a specific ring, then this ring is said to be an integral domain *[**?**].*
Show that a field F is always an integral domain. Consequently $F \setminus \{0\}$ is a commutative group for multiplication.

Solution 1. [204]