• Let $R_1, R_2$ be two rings with at least 2 elements. Show that $R_1 \oplus R_2$ has a zero divisor.

• Let $R$ be a ring and

$$C(R) = \{x \in R : ax = xa \text{ for all } a \in R.\}$$

Show that $C(R)$ is a subring of $R$. 