(1) \((\mathbb{Z}, +, \cdot)\) is a commutative ring with identity.

(2) \(M_n(\mathbb{R}) = \text{the set of all } n \times n \text{ matrices with entries in } \mathbb{R} \text{ with matrix addition and matrix multiplication is a commutative ring with identity.}\)

(3) \(\phi : \mathbb{Z} \to \mathbb{Z} \text{ defined by } \phi(n) = 2n \text{ is a ring homomorphism.}\)

(4) The set of all odd numbers in \(\mathbb{Z}\) form an ideal in \(\mathbb{Z}\).

(5) The set \(\{\sum_{i=0}^{n} a_i x^i \in \mathbb{Z}[x] \mid a_0 = 1\}\) is an ideal in \(\mathbb{Z}[x]\).

(6) \((0)\) is a prime ideal in \(\mathbb{Q}[x]\).