

Instructions: Watch the video entitled “Section 18.1 Rings” then do the exercises below.

1. Find the products in the following rings:

(a) $(12)(16)$ in \mathbb{Z}_{24} .

(b) $(16)(3)$ in \mathbb{Z}_{32}

(c) $(11)(-4)$ in \mathbb{Z}_{15}

(d) $(6, 10)(4, 12)$ in $\mathbb{Z}_7 \times \mathbb{Z}_{15}$.

2. Show that the set F of all function $f : \mathbb{R} \rightarrow \mathbb{R}$ are a ring.

3. Show that the set $\{a + b\sqrt{2} : a, b \in \mathbb{Z}\}$ with the usual addition and multiplication forms a ring.