20181288 원빈호

1. $e_y e_y = e_y y \longrightarrow \therefore e_y = y$

2. Since ab is a unit, $\exists x \in R$ s.t $abx = 1$

   Then $a \cdot (bx) = 1$, which means a is a unit. (bx is the inverse of a)
   Then $b \cdot (ax) = 1$, which means b is a unit. (ax is the inverse of b)

3.

4. It is not isomorphic to each other,
   Let f be isomorphic
   if : $2\mathbb{Z} \rightarrow 3\mathbb{Z}$
   Let $f(2) = 3a$ for some integer a.
   then $f(4) = f(2+2) = f(2) + f(2) = 3a + 3a = 6a$
   $f(8) = f(2 \cdot 2) = f(2) \times f(2) = 3a \times 3a = 9a^2 \longrightarrow$ only holds for $a = 0$.
   but $f(0) = 0$ so, contradiction occurs.