

1 (Judson 9.27) Let G and H be groups, and suppose $G \cong H$. Show that if G is cyclic, then so is H .

2

- (a) Prove that $\mathbb{Z} \times \mathbb{Z}$ is not cyclic.
- (b) More generally, prove that $\mathbb{Z} \times G$ is not cyclic for any group G of order $|G| \geq 2$.