

Reading Quiz §9

1. [1] Find a normal subgroup of \mathbb{Z}_{18} .
2. [2] Find a subgroup that is not normal in D_8 where $|D_8| = 16$. Justify your choice.
3. True/False: If the statement is *always* true, give a *brief* explanation of why it is (not a formal proof!). If the statement is false, give a counterexample.
 - (a) [1] $\mathbb{Z}/4\mathbb{Z} \cong \mathbb{Z}_2$.
 - (b) [1] In $\mathbb{Z}/4\mathbb{Z}$, $(3 + 4\mathbb{Z}) + (3 + 4\mathbb{Z}) = 2 + 4\mathbb{Z}$