

HOMEWORK 5 (DUE: 11:15 AM, OCT 17 WED)

Feel free to use the statements in Exercise 13.E. without proof, but make sure that you know how to prove them.

1. Do Exercise 13.F.1–3. in [Pin10, p 132].
2. Do Exercise 13.G.1–5. (*except 6*) in [Pin10, p. 132].
3. Do Exercise 13.I.1–6. in [Pin10, pp. 133–134].

Here, the index of a subgroup is defined as follows.

Definition 0.1. For a subgroup H of G , *the index of H in G* is the number of left cosets of H in G , denoted $(G : H)$.

REFERENCES

[Pin10] Pinter, C. C., *A Book of Abstract Algebra*, 2nd ed., Dover Publications, 2010.