

# Differential Topology

4th and 5th Problem Sets  
Due Farvardin 22th, 1398

- Problems 2, 8, 9, 10, 12, 17, 21 and 22, pages 52-55 from [H].
- Problems 6, 12, 15 and 21, pages 79-82 from [H].

For the following problems, first read section 2.1. (Simplicial and Singular Homology) from [H].

- Problems 9, 18, 24, 26 and 29, pages 131-133 from [H].
- Problem 3, page 177 from [B].
- Problems 1, 2 and 4, page 190 from [B].
- Problems 1, 4 and 5, page 245 from [B].
- Compute the all the homology groups  $H_*(\mathbb{P}^n)$  and  $H_*(\mathbb{P}^n, \mathbb{P}^{n-1})$  with coefficients in  $\mathbb{Z}_2$ .

## REFERENCES

- [B] Bredon, G. E., *Topology and Geometry*, Graduate Texts in Mathematics, Springer.
- [H] Hatcher, A., *Algebraic Topology*. Cambridge University Press, 2002.