

Differential Topology

2nd Problem Set
Due Mehr 26th, 1397

- Problems 2, 7 and 11, pages 25-27 from [GP].
- Prove that the group $U(n)$ of $n \times n$ complex unitary matrices is a manifold naturally embedded in $\mathbb{C}^{n^2} = \mathbb{R}^{2n^2}$.
(Recall that $U(n) = \{A \in M_n(\mathbb{C}) \mid AA^* = Id\}$.)
- Problems 5,7 and 11, pages 32-33 from [GP].

REFERENCES

- [GP] Guillemin, V., Pollack, A., *Differential Topology*, Prentice Hall.