Differential Geometry recap exercises: Lie brackets, integral curves and flows

2026

These are some exercises from the bachelor notes to refresh your knowledge on Lie brackets and flows of vector fields.

- Basic properties of Lie brackets: **3.32**;
- Practice with computations of Lie brackets: **3.31**, **3.33** and **3.34**;
- Computing Lie brackets for embedded submanifolds (concrete example): **3.35**;
- Computing Lie brackets for embedded submanifolds (abstractly): **3.42** and **3.43**;
- Basic exercises for integral curves and flows: **3.63** and **3.80**;
- More challenging exercise integral curves and flows: **3.75**;
- Practice with all topics at once: **3.102** and **3.103**.