

**Exercise 1.2.1**

Briefly explain the minus sign:

- (a) in conservation law (1.2.3) or (1.2.5) if  $Q = 0$
- (b) in Fourier's law (1.2.8)
- (c) in conservation law (1.2.12),  $\frac{\partial u}{\partial t} = -\frac{\partial \phi}{\partial x}$
- (d) in Fick's law (1.2.13)