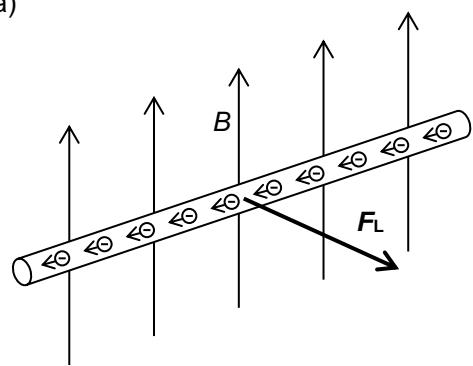
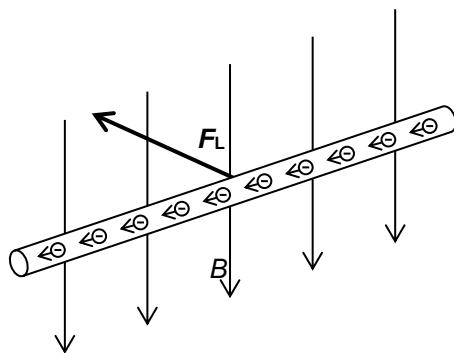


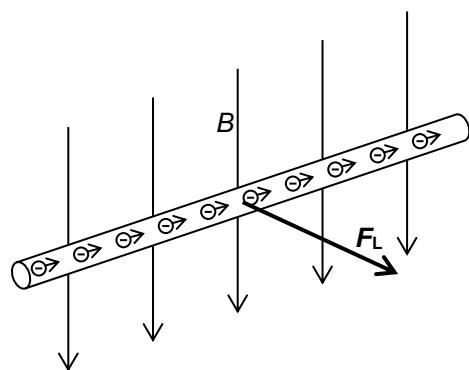
1. a)



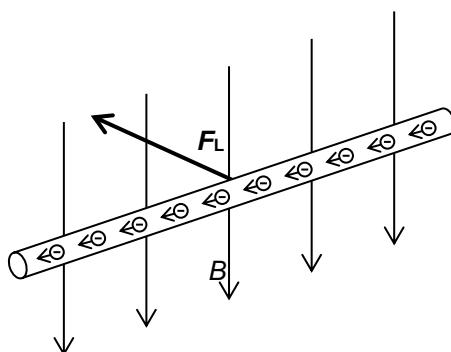
b)



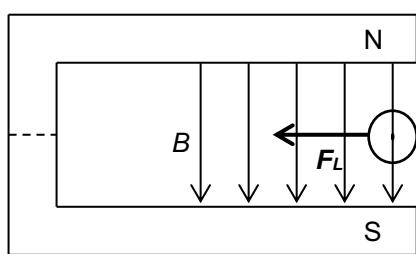
c)



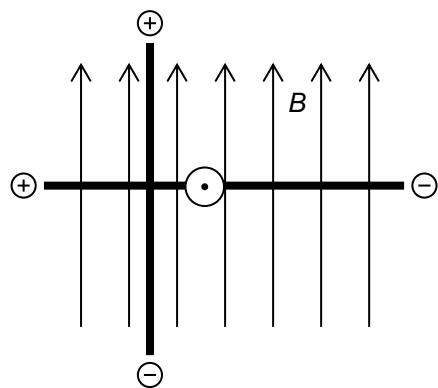
d)



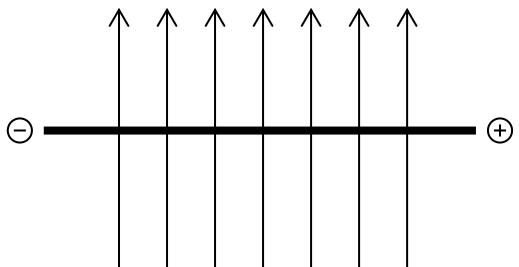
2.



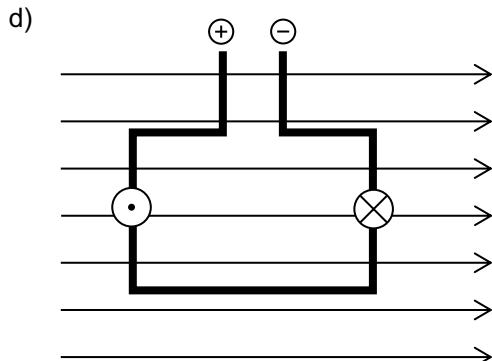
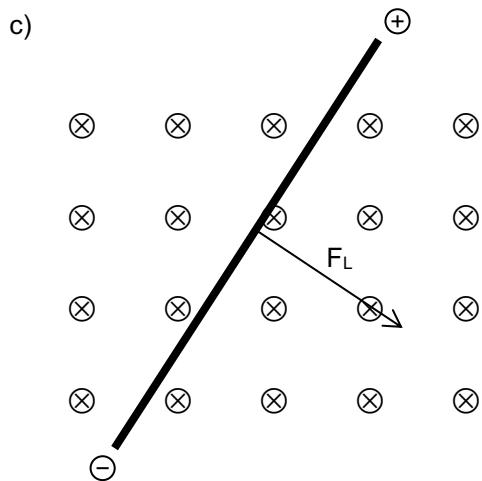
3. a)



b)

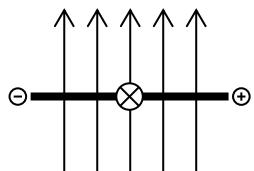


Auf den Leiter parallel zum Magnetfeld
wirkt keine Lorentzkraft



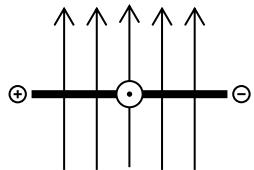
Auf das Leiterstück parallel zum Magnetfeld wirkt keine Lorentzkraft.

4. a) $F_L = I \cdot B \cdot s = 3.5 \text{ A} \cdot 0.05 \text{ T} \cdot 0.09 \text{ m} = 0.0158 \text{ N} = \underline{\underline{16 \text{ mN}}}$



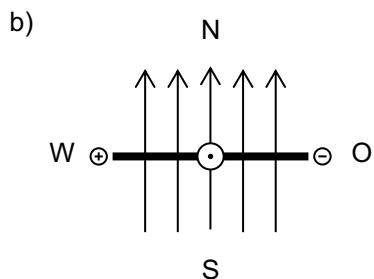
b) Es wirkt keine Lorentzkraft, da der Draht parallel zu den Magnetfeldlinien verläuft.

c) $F_L = I \cdot B \cdot s = 33 \cdot 10^{-6} \text{ A} \cdot 33 \cdot 10^{-6} \text{ T} \cdot 33 \cdot 10^3 \text{ m} = \underline{\underline{3.6 \cdot 10^{-5} \text{ N}}}$



5. $I = \frac{F_L}{B \cdot s} = \frac{0.20 \text{ N}}{0.50 \text{ T} \cdot 0.04 \text{ m}} = \underline{\underline{10 \text{ A}}}$

6. a) $F_L = I \cdot B \cdot s = 4'400 \text{ A} \cdot 14.2 \cdot 10^{-6} \text{ T} \cdot 65 \text{ m} = \underline{\underline{4.1 \text{ N}}}$



Ansicht von oben. Der geografische Nordpol der Erde ist ein magnetischer Südpol.
Die Leitung wird ein wenig nach oben gehoben!

7. $B = \frac{F_L}{I \cdot s} = \frac{0.34 \text{ N}}{15.5 \text{ A} \cdot 0.037 \text{ m}} = \underline{\underline{0.59 \text{ T}}}$