**A1**

Berechnen Sie die pH-Werte von:

a) Salzsäure c0(HCL) = 0,001mol/l -> starke Säure

pH = -lg [c0(HCL)]

pH = -lg (0,001)

pH = - (-3)

pH = 3

b) Kalilauge c0(KOH) = 0,01mol/l -> starke Base

pOH = -lg [c0(KOH)]

pOH = -lg (0,01)

pOH = - (-2)

pOH = 2

pH = pKw - pOH

pH = 14 – 2

pH = 12

c) Kalkwasser c0(Ca(OH)2) = 0,0005mol/l -> starke Base

pOH = -lg [c0(Ca(OH)2)]

pOH = -lg (0,0005)

pOH = - (-3,30)

pOH = 3,3

pH = pKw - pOH

pH = 14 - 3,3

pH = 10,7

d) Essigsäure c0(HAc) = 0,1mol/l -> schwache Säure

pH = × (pks-lg[c0(HAc)]

pH = × (4,75-lg(0,1))

pH = × (4,75-(-1))

pH = × (5,75)

pH = 2,875

e) Ammoniaklösung c0(NH3) = 1mol/l -> schwache Base

pOH = × (pkb-lg[c0(NH3)]

pOH = × (4,75-lg(1))

pOH = × (4,75-0)

pOH = × (4,75)

pOH = 2,38

pH = pkw – pOH

pH = 14 – 2,38

pH = 11,62