Remarks: See §7.3, page 255 till 269 and example 4

Answers:

a. 0,25 m

b. 375000 litre

Remarks:

a.
- Volume of conrete: $5144{,}4\ m^3$
- Total tunnelweight (Concrete and bulkheads.): 131250 kN
- Water pressure at the bottom of the tunnel: $87{,}5 kN/m^2$
- This gives a depth of 8,75 m
- The tunnel is still 0,25 m above the water level.

b.
- the tunnel sinks whenever it's bottom is 9 m under water.
- The resulting water pressure: $90 kN/m^2$
- Resulting upward force: 135000 kN
  Remark: The upward force doesn't change with other depths
- Own weight tunnel: 131250 kN
- The tunnel should be 3750 kN heavier
- This takes 375000 litres of water