Zad. 6.

$m_s = 497,12g$

$V = 500 cm^3$

$d = 1,689 g/cm^3$

Obliczamy masę roztworu:

$d = \dfrac{m}{V}$

$m = d \cdot V$

$m_r = 1,689 g/cm^3 \cdot 500 cm^3 = 844,5 g$
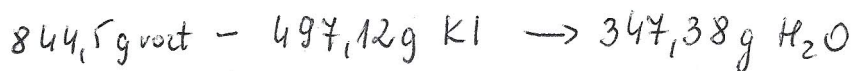
$C_p = \dfrac{m_s}{m_r} \cdot 100\%$

$C_p = \dfrac{497,12g}{844,5g} \cdot 100\% = \underline{58,87\%}$

Zad. 7.

temp = 20°C = 293 K

$844,5 g$ roztw. — $497,12g$ KI $\longrightarrow$ $347,38g$ H_2O

$497,12g$ KI $\longrightarrow$ $347,38g$ H_2O

x KI $\longrightarrow$ $100g$ H_2O

$x = \dfrac{497,12 \cdot 100}{347,38} = \underline{143,1 g} / 100g\ H_2O$

Otrzymany roztwór nie był roztworem nasyconym w temp. 293 K, ponieważ rozpuszczalność KI w wodzie w tej temp. wynosi $149g / 100g\ H_2O$.

Zad. 8

$M_{KI} = 39 + 127 = 166 g/mol$

$m_{KI} = 497,12 g$

liczba moli:

$n = 497,12g : 166g/mol = 2,995$ moli ≈ 3 mole

$V_r = 500 cm^3 + 120 cm^3 = 620 cm^3 = 0,62 dm^3$

$C_{mol} = \dfrac{n}{V_r} = \dfrac{3\ mol}{0,62 dm^3} = \underline{4,8\ mol/dm^3}$

Zad. 9.

$M_{MgCl_2} = 24 + 2 \cdot 35,5 = 95 g/mol$

$M_{MgCl_2 \cdot 6H_2O} = 95 + 6 \cdot 18 = 203 g/mol$

$m_{MgCl_2} = 10\% \cdot 500g = 0,1 \cdot 500g = 50g$

$95g\ MgCl_2 \longrightarrow 203g\ MgCl_2 \cdot 6H_2O$

$50g\ MgCl_2 \longrightarrow x$
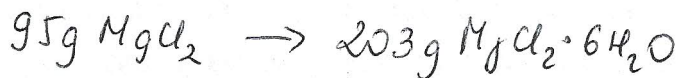
$x = \dfrac{50 \cdot 203}{95} = \underline{106,8 g\ MgCl_2 \cdot 6H_2O}$