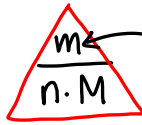


MASSA, AINEMÄÄRÄ & MOOLIMASSA

ainemäärä (mol) =  $\frac{\text{massa (g)}}{\text{moolimassa (g/mol)}}$

$n = \frac{m}{M}$



jostkus m lasketaan tiheyden avulla  
 $m = \rho \cdot V$

$m = n \cdot M$

$M = \frac{m}{n}$

Vastauksen tarkkuus riippuu lähtöarvona olevista m tai n arvoista

ESIM Sakkaroosia  $C_{12}H_{22}O_{11}$  on 1,0 kg → ainemäärä?

kinjataan tiedot  $\left\{ \begin{array}{l} m(C_{12}H_{22}O_{11}) = 1,0 \text{ kg} = 1000 \text{ g} \\ M(C_{12}H_{22}O_{11}) = (12 \cdot 12,01 + 22 \cdot 1,008 + 11 \cdot 16,00) \text{ g/mol} \\ = 342,296 \text{ g/mol} \\ n = ? \rightarrow n = \frac{m}{M} \end{array} \right.$

lasku yksiköt mukaan!  $\left\{ \begin{array}{l} n(C_{12}H_{22}O_{11}) = \frac{1000 \text{ g}}{342,296 \text{ g/mol}} = 2,9214 \text{ mol} \approx \underline{\underline{2,9 \text{ mol}}} \end{array} \right.$

ESIM Stearinihappoa  $C_{17}H_{35}COOH$  tarvitaan 0,0240 mol. Palyönko pummitaan?

lasku  $\left\{ \begin{array}{l} n(C_{17}H_{35}COOH) = 0,0240 \text{ mol} \\ m = ? \rightarrow m = n \cdot M \\ M(C_{17}H_{35}COOH) = (17 \cdot 12,01 + 36 \cdot 1,008 + 2 \cdot 16) \text{ g/mol} \\ = 284,468 \text{ g/mol} \end{array} \right.$

lasku  $\left\{ \begin{array}{l} m(C_{17}H_{35}COOH) = 0,0240 \text{ mol} \cdot 284,468 \text{ g/mol} \\ = 6,8272 \text{ g} \\ \approx \underline{\underline{6,83 \text{ g}}} \end{array} \right.$

tehtävät s.102-103

4.11

4.12

4.15a

4.17

4.18



⊕ litium

⊖ karbonaatti

Mooli  
 anionit /  
 kationit 4