

# RELATIVNA ATOMSKA IN RELATIVNA MOLEKULSKA MASA

## UTRJEVANJE

### REŠITEV

Tekst prepisi v zvezek, nato z uporabo periodnega sistema reši nalogo.

#### Naloga

Zapiši relativni atomski masi dušika in klora.

$$A_r(\text{N}) = 14,0$$

$$A_r(\text{Cl}) = 35,5$$

### UTRJEVANJE

V zvezek napiši naslov UTRJEVANJE, nato reši naloge.



- V periodnem sistemu poišči relativni atomski masi kalcija in argona. Zapiši ju v zvezek.

$$A_r(\text{Ca}) = 40,1$$

$$A_r(\text{Ar}) = 39,9$$

- Reši 1. in 2. nalogo v delovnem zvezku, str. 60 in 61.

→ Razvrstitev atomov po naraščajoči masi: atom vodika, atom dušika, atom joda.

$$\rightarrow \frac{\text{masa atoma joda}}{\text{masa atoma dušika}} = \frac{21 \times 10^{-23} \text{ g}}{2,3 \times 10^{-23} \text{ g}} = 9,1$$

Atom joda je 9,1-krat težji od atoma dušika.

→ Razvrstitev atomov po naraščajoči masi: atom vodika, atom dušika, atom joda.

$$\rightarrow \frac{A_r(\text{I})}{A_r(\text{N})} = \frac{127}{14,0} = 9,1$$

Atom joda je 9,1-krat težji od atoma dušika.

## 2. Relativna atomska masa $A_r$

a) → 1 atom fosforja = 31 atomov vodika

→ 1 atom kroma = 13 atomov helija

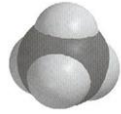
b)

D	U	Š	I	K					
			V	O	D	I	K		
				B	A	K	E	R	
	Z	L	A	T	O				
		K	L	O	R				
			T	E	L	U	R		

- Izračunaj relativne molekulske mase. Račune zapiši v zvezek.



A metana



$$\begin{aligned} M_r(\text{CH}_4) &= 1 \cdot A_{r(\text{C})} + 4 \cdot A_{r(\text{H})} \\ M_r(\text{CH}_4) &= 1 \cdot 12,0 + 4 \cdot 1,0 \\ \underline{M_r(\text{CH}_4)} &= \underline{16,0} \end{aligned}$$

B fosforove kisline



$$\begin{aligned} M_r(\text{H}_3\text{PO}_4) &= 3 \cdot A_{r(\text{H})} + 1 \cdot A_{r(\text{P})} + 4 \cdot A_{r(\text{O})} \\ M_r(\text{H}_3\text{PO}_4) &= 3 \cdot 1,0 + 1 \cdot 31,0 + 4 \cdot 16,0 \\ M_r(\text{H}_3\text{PO}_4) &= 3,0 + 31 + 64 = 98,0 \\ \underline{M_r(\text{H}_3\text{PO}_4)} &= \underline{98,0} \end{aligned}$$

- Reši 3. nalogo v delovnem zvezku, str. 61.

A

$$\begin{aligned} M_r(\text{NH}_3) &= A_{r(\text{N})} + 3 \cdot A_{r(\text{H})} \\ &= 14,0 + 3 \cdot 1,0 \\ &= 14,0 + 3,0 = 17,0 \\ \underline{M_r(\text{NH}_3)} &= \underline{17,0} \end{aligned}$$

$$\begin{aligned} M_r(\text{H}_2\text{CO}_3) &= 2 \cdot A_{r(\text{H})} + A_{r(\text{C})} + 3 \cdot A_{r(\text{O})} \\ &= 2 \cdot 1,0 + 12,0 + 3 \cdot 16,0 \\ &= 2,0 + 12,0 + 48,0 = 62,0 \\ \underline{M_r(\text{H}_2\text{CO}_3)} &= \underline{62,0} \end{aligned}$$

$$\begin{aligned} M_r(\text{C}_5\text{H}_5\text{N}) &= 5 \cdot A_{r(\text{C})} + 5 \cdot A_{r(\text{H})} + A_{r(\text{N})} \\ &= 5 \cdot 12,0 + 5 \cdot 1,0 + 14,0 \\ &= 60,0 + 5,0 + 14,0 = 79,0 \\ \underline{M_r(\text{C}_5\text{H}_5\text{N})} &= \underline{79,0} \end{aligned}$$

$$\begin{aligned} M_r(\text{P}_4\text{O}_{10}) &= 4 \cdot 31,0 + 10 \cdot 16,0 \\ &= 124,0 + 160,0 = 284,0 \\ \underline{M_r(\text{P}_4\text{O}_{10})} &= \underline{284,0} \end{aligned}$$

B

Jabolčna kislina  $C_4H_6O_5$ 

$$\begin{aligned}M_r(C_4H_6O_5) &= 4 \cdot A_r(C) + 6 \cdot A_r(H) + 5 \cdot A_r(O) \\ &= 4 \cdot 12,0 + 6 \cdot 1,0 + 5 \cdot 16,0 \\ &= 48,0 + 6,0 + 80,0 = 134,0\end{aligned}$$

$$\underline{M_r(C_4H_6O_5) = 134,0}$$

C

Teobromin  $C_7H_8N_4O_2$ 

$$\begin{aligned}M_r(C_7H_8N_4O_2) &= 7 \cdot A_r(C) + 8 \cdot A_r(H) + 4 \cdot A_r(N) + 2 \cdot A_r(O) \\ &= 7 \cdot 12,0 + 8 \cdot 1,0 + 4 \cdot 14,0 + 2 \cdot 16,0 \\ &= 84,0 + 8,0 + 56,0 + 32,0 = 180,0\end{aligned}$$

$$\underline{M_r(C_7H_8N_4O_2) = 180,0}$$