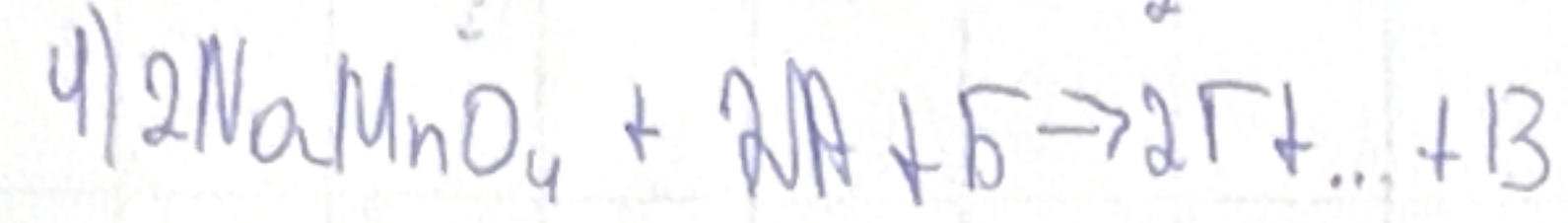
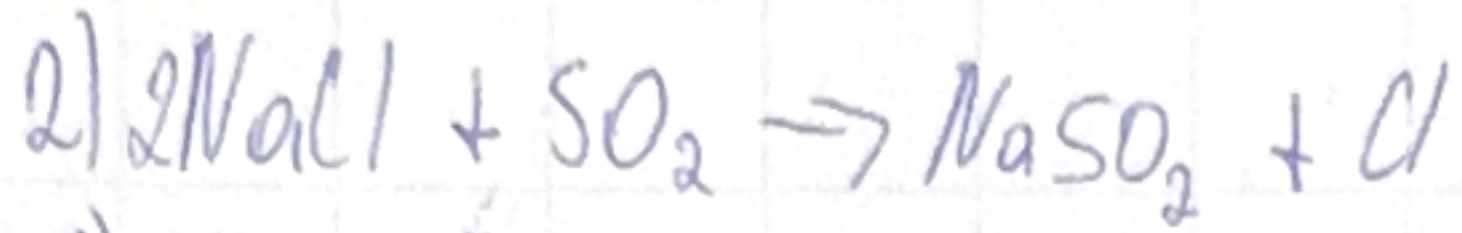
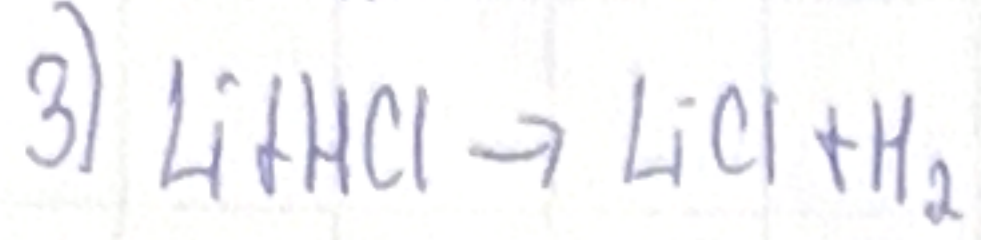
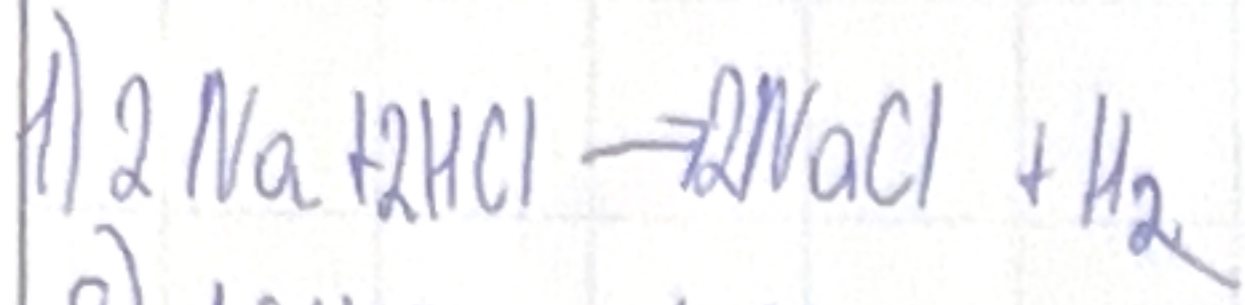


№<sub>04</sub>



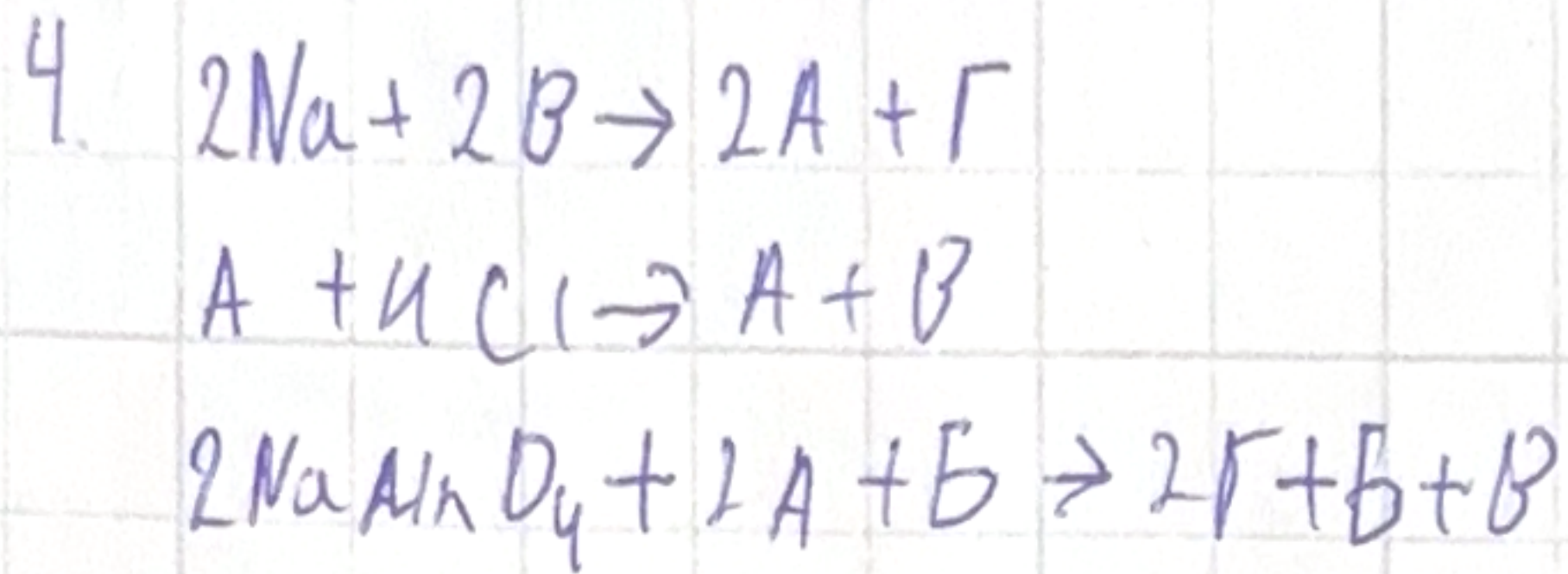
№<sub>02</sub>

1. Біріншісі - CH

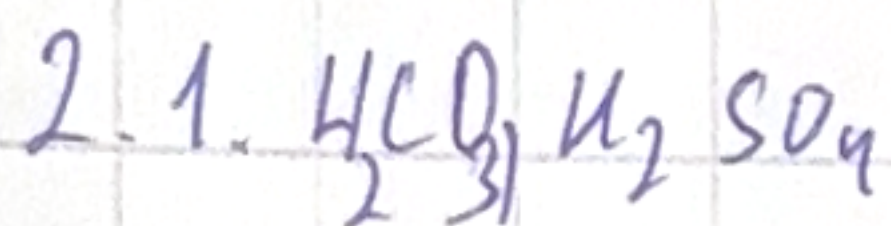
Екіншісі - H<sub>2</sub>SO<sub>4</sub>



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$$\begin{array}{l|l} 3. \quad m = 8,282 & \frac{m}{q} = \frac{8,28}{401} = 0,02 \\ q = 401 \text{ кДж} & \\ \hline m_u = ? & m_u = 5500 \cdot 0,02 = 1102 \\ m_{\text{н-лік}} = ? & m_{\text{н-лік}} = 4200 \cdot 0,02 = 842 \end{array}$$

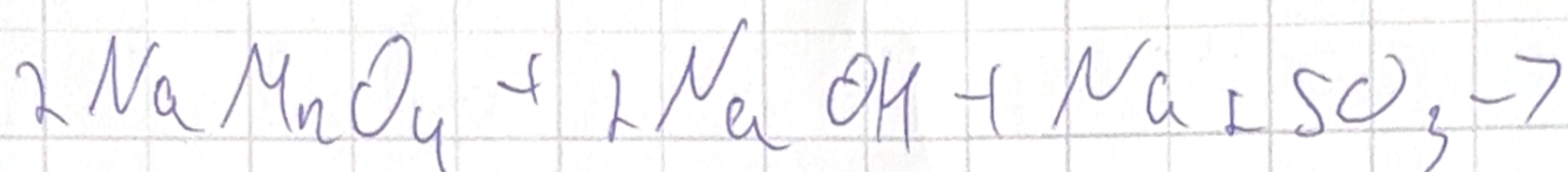
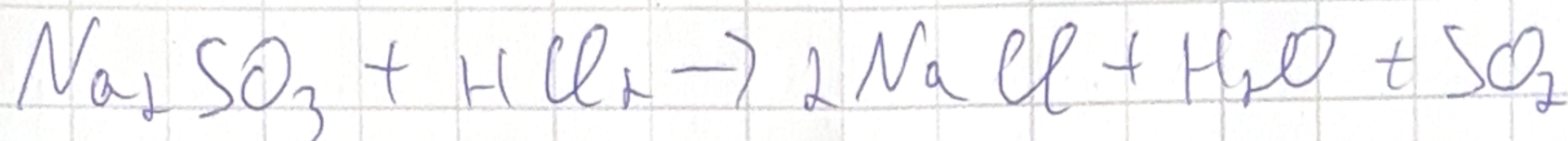
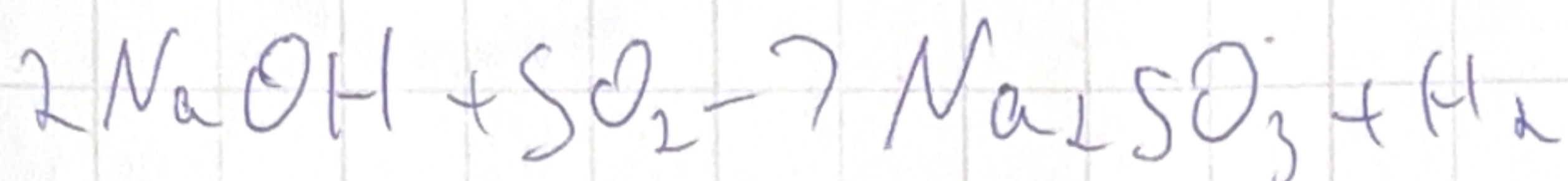
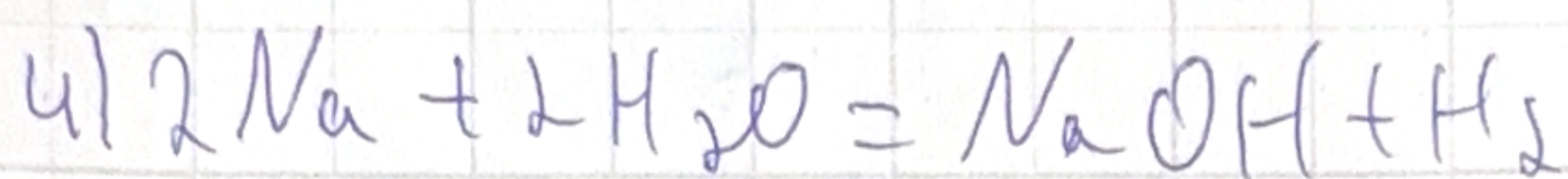


2. 2

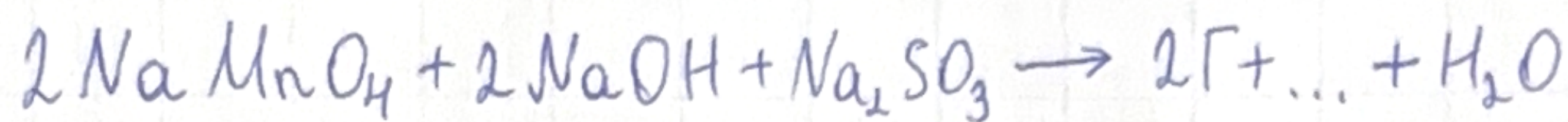
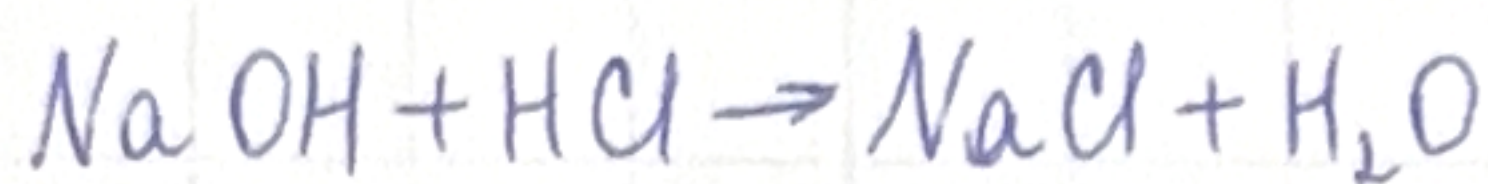
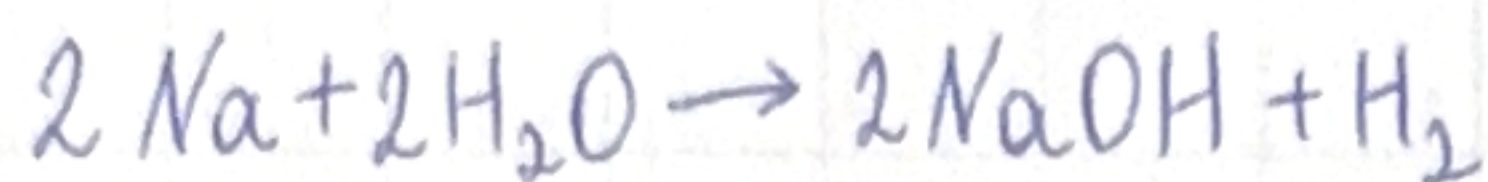
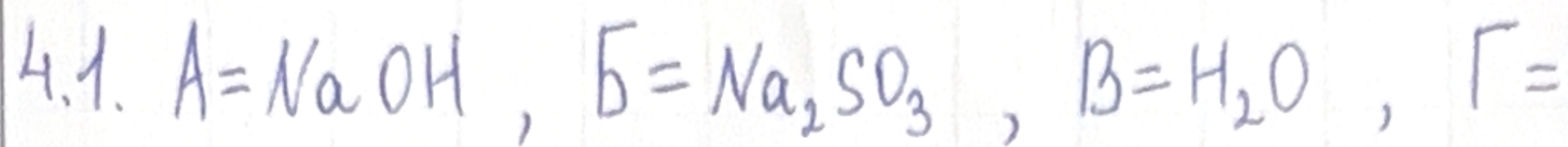
$$\begin{array}{l} V_{\text{сж}} = 15,93 \text{ мл} \\ m = 272 \\ \hline V_{\text{20g}} = 2,576 \text{ мл} \end{array}$$



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3.1.  $\frac{M}{m}(\text{C}_8\text{H}_{18}) = 114 \text{ г/моль}$  цукротан выделяет  $5500 \text{ кДж/моль} \Rightarrow 48,246 \text{ Дж/г}$

$\frac{M}{m}(\text{C}_6\text{H}_{14}) = 86 \text{ г/моль}$  н-гексан выделяет  $4200 \text{ кДж/моль} \Rightarrow 48,837 \text{ Дж/г}$

$$5,7 \cdot 48246 = 275002 \text{ Дж}$$

$$2,58 \cdot 48837 = 125999 \text{ Дж}$$

$$275002 + 125999 = 401001 \approx 401 \text{ кДж}$$

$$n(\text{C}_8\text{H}_{18}) = 5,7 : 8,28 = 0,688$$

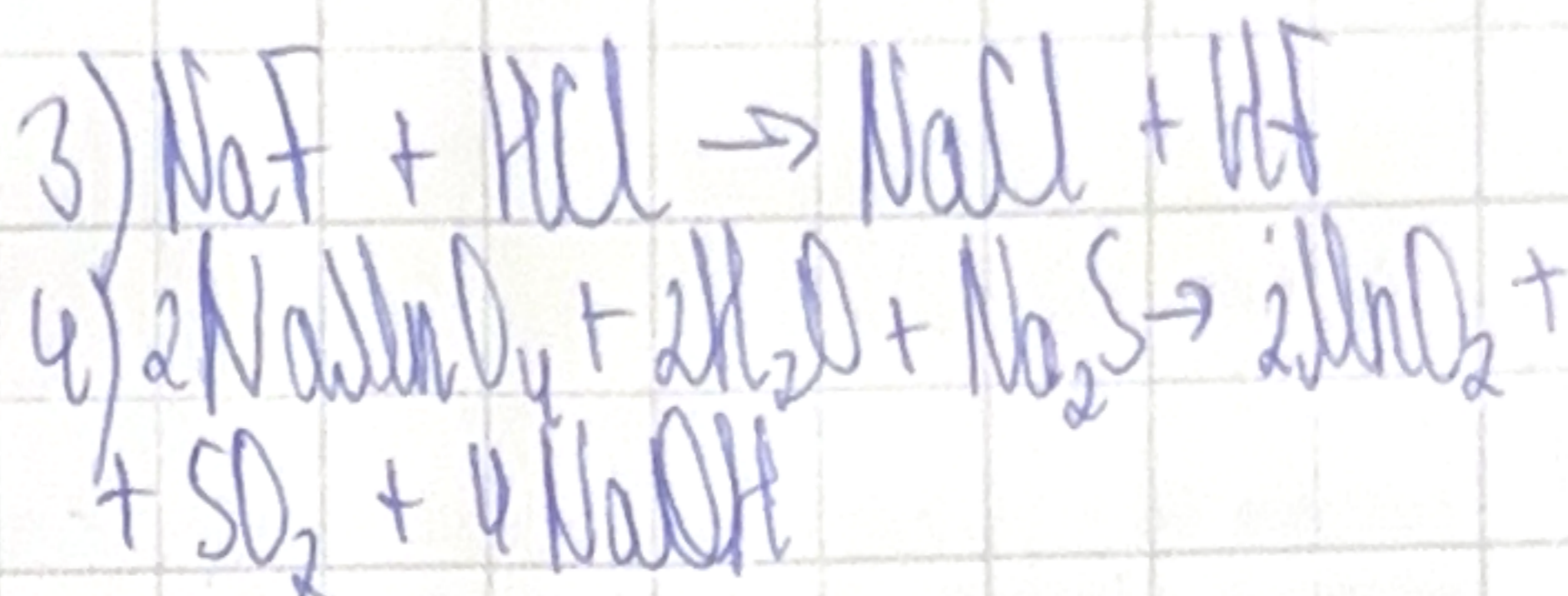
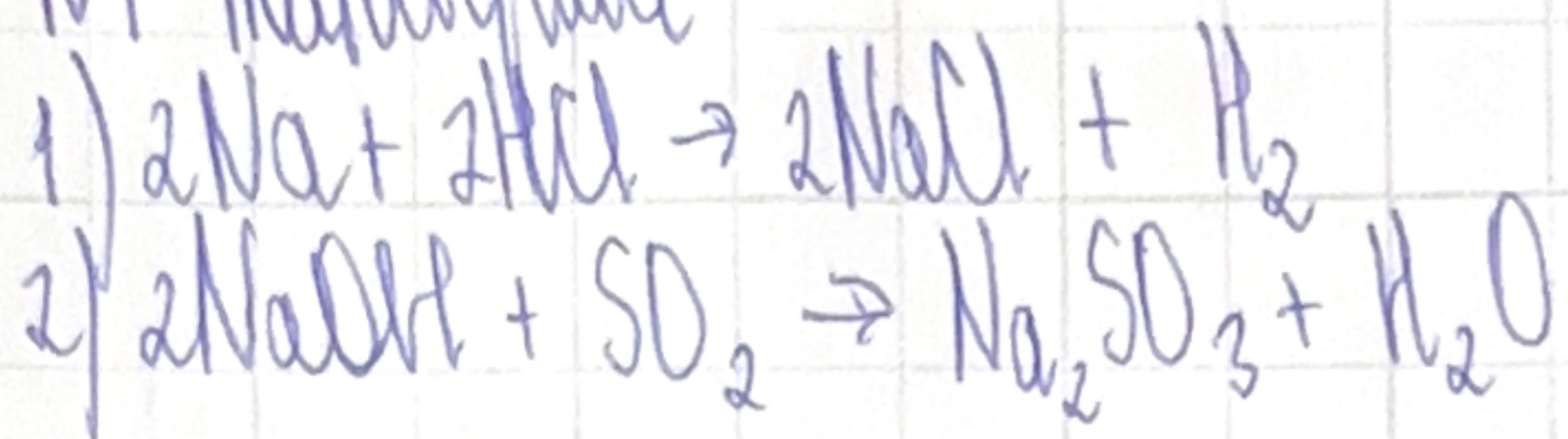
$$n(\text{C}_6\text{H}_{14}) = 2,58 : 8,28 = 0,312$$

$$\overline{M}(\text{C}_8\text{H}_{18}) + \overline{M}(\text{C}_6\text{H}_{14}) = 114 \cdot 0,688 + 86 \cdot 0,312 = 78,432 + 26,832 = 105,264 \approx 105 \text{ г/моль}$$

$$M(\text{C}) = 105 \text{ г/моль}$$

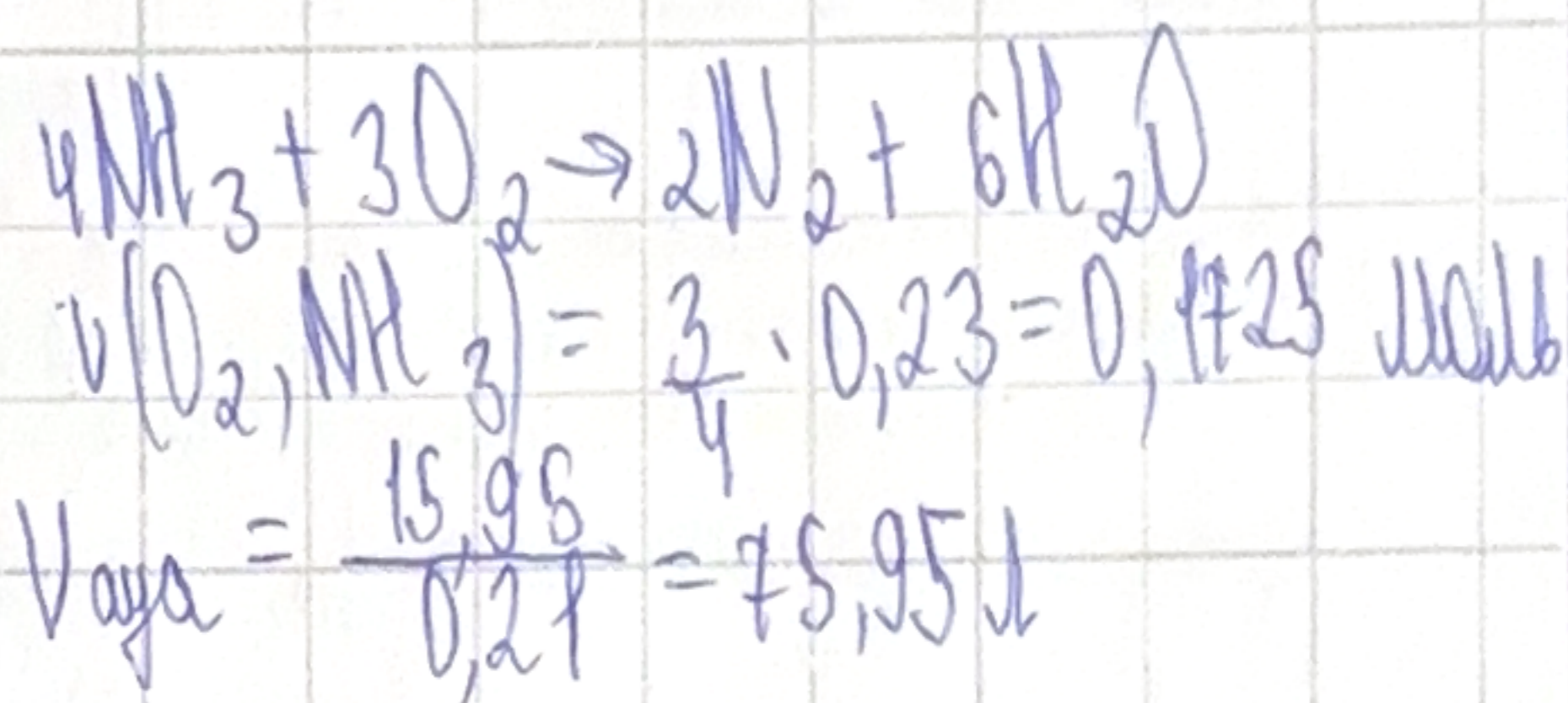
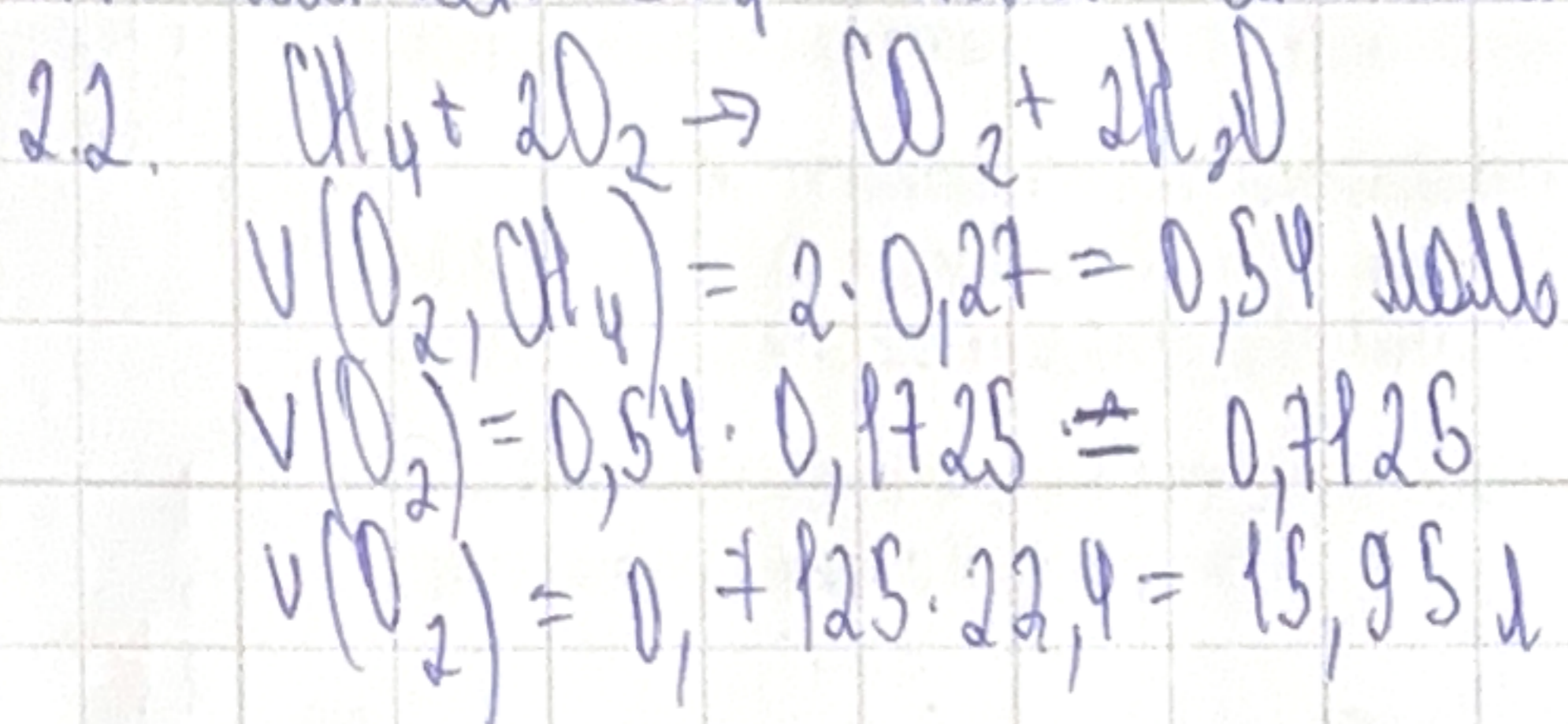


N4 тапсырма

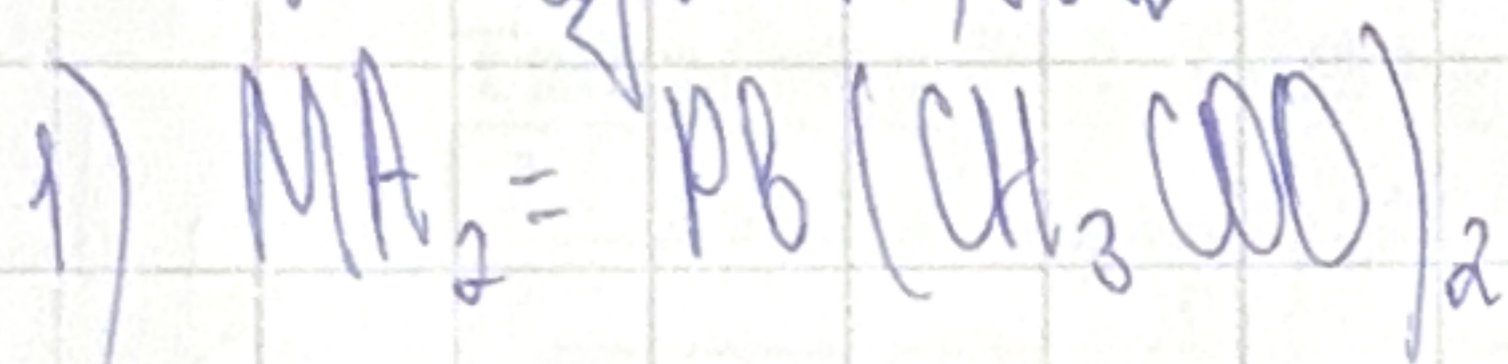


N2 тапсырма

2.1. жеміс  $\text{CH}_4$  және аммиак  $\text{NH}_3$



Ж:  $V_{\text{O}_2} = 75,95 \text{ л}$



$$3) n(\text{C}_8\text{H}_{18}) = \frac{m}{M} = \frac{6,03}{114} = 0,0529 \text{ моль}$$

$$n(\text{C}_6\text{H}_{14}) = \frac{2,25}{86} = 0,0262 \text{ моль}$$

$$n = 0,0529 + 0,0262 = 0,0791 \text{ моль (құрақ)}$$

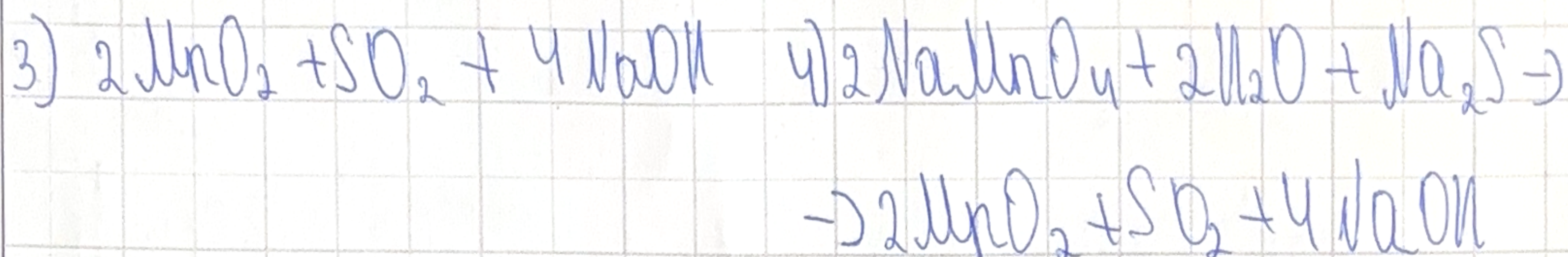
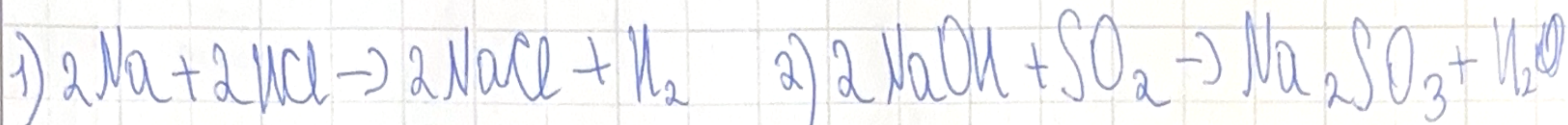
$$X(\text{C}_8\text{H}_{18}) = \frac{0,0529}{0,0791} = 0,669$$

$$X(\text{C}_6\text{H}_{14}) = \frac{0,0262}{0,0791} = 0,331$$

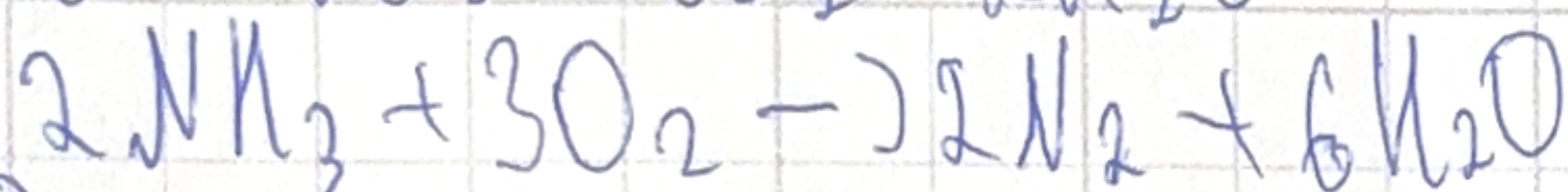
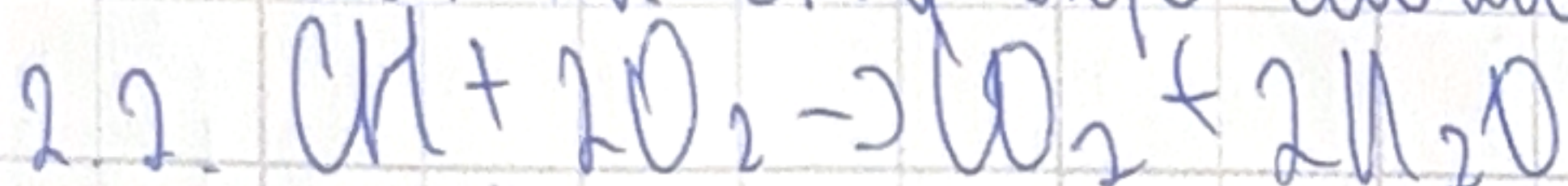


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N4



2.1 неман  $CH_4$  және аммиак  $NH_3$



$$v(O_2) = 2 \cdot 0,27 = 0,54$$

$$v(O_2) = \frac{3}{4} \cdot 0,23 = 0,1725$$

$$v(O_2) = 0,7125 \cdot 22,4 = 15,95$$

$$V_{O_2} = \frac{15,95}{0,21} = 75,95 \text{ л.}$$

N3

$$n(C_8H_{18}) = \frac{m}{M} = \frac{6,03}{114} = 0,0529 \text{ моль}$$

$$n(C_6H_{14}) = \frac{2,25}{86} = 0,0262 \text{ моль}$$

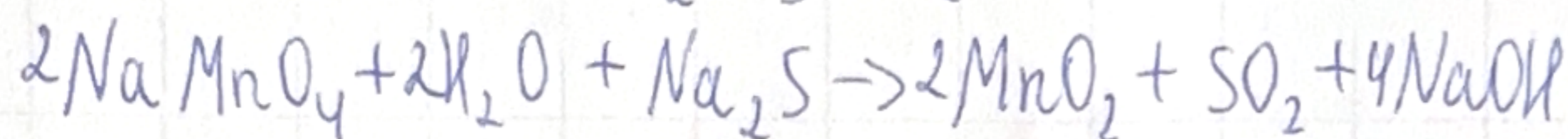
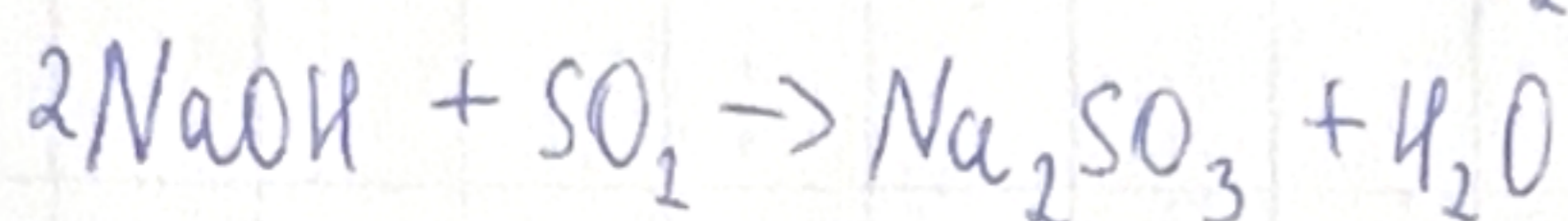
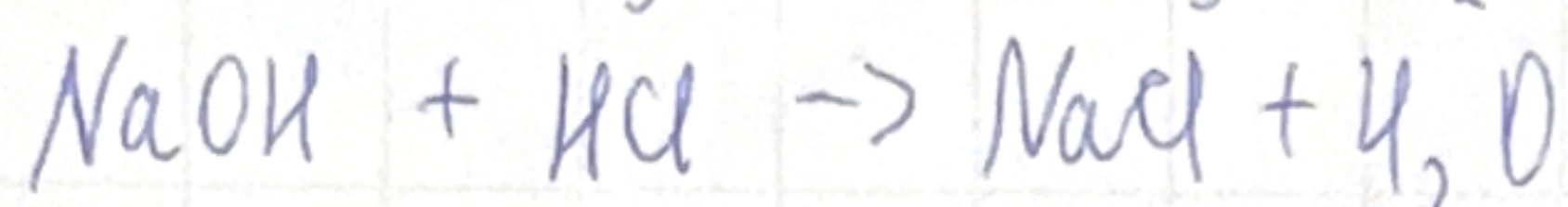
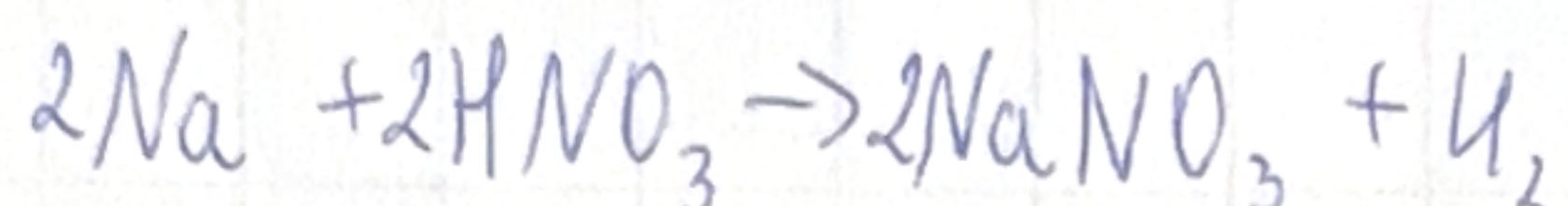
$$n = 0,0529 + 0,0262 = 0,0791$$

$$x(C_8H_{18}) = \frac{0,0529}{0,0791} = 0,669$$

$$x(C_6H_{14}) = \frac{0,0262}{0,0791} = 0,331$$



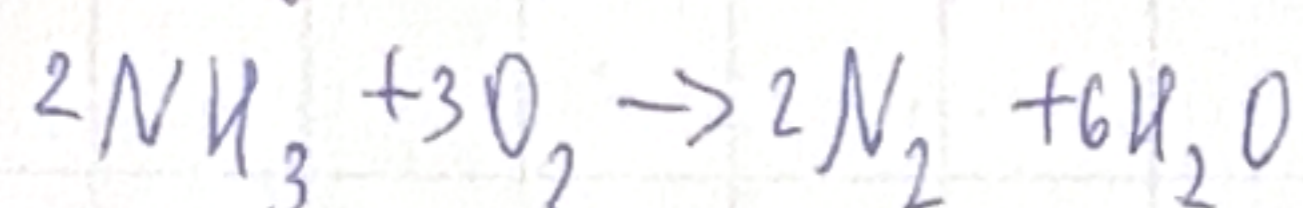
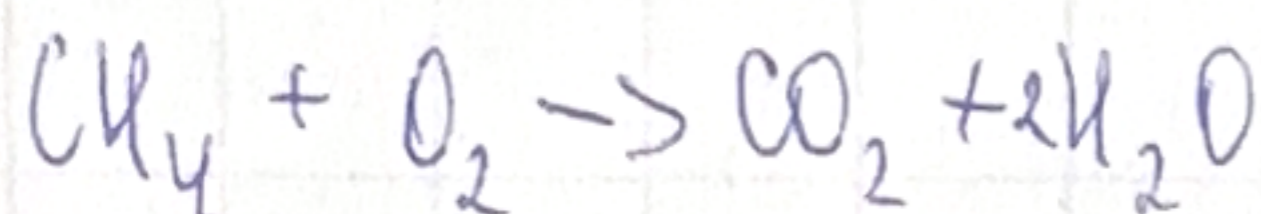
4. 1.



2. 1.

$\text{CH}_4$  метан және  $\text{NH}_3$  аммиак

2. 2.



$$v(\text{O}_2) = 2 \cdot 0,27 = 0,54$$

$$v(\text{O}_2) = \frac{3}{4} \cdot 0,23 = 0,1725$$

$$v(\text{O}_2) = 0,7125 \cdot 22,4 = 15,95$$

$$v_{\text{сүра}} = \frac{15,95}{0,21} = 75,95 \text{ л}$$

3. 1.

$$n(\text{C}_6\text{H}_{14}) = \frac{2,25}{86,1766} = 0,026109 \text{ моль}$$

$$n(\text{C}_8\text{H}_{18}) = \frac{6,03}{114,2302} = 0,052788 \text{ моль}$$

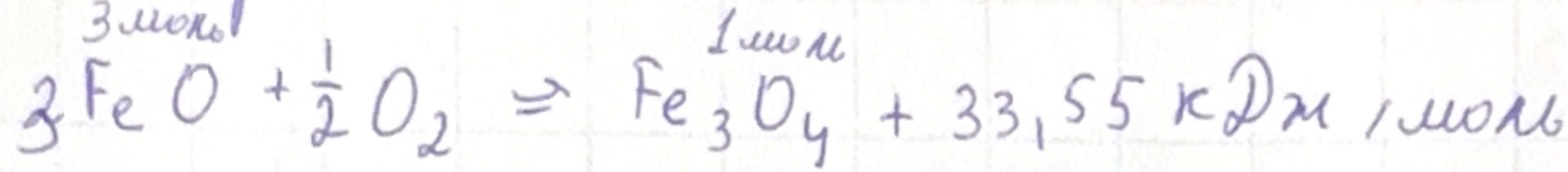
$$n = 0,026109 + 0,052788 = 0,078897 \text{ моль}$$

$$X(\text{C}_8\text{H}_{18}) = \frac{0,052788}{0,078897} = 0,669 \text{ моль}$$

$$X(\text{C}_6\text{H}_{14}) = \frac{0,026109}{0,078897} = 0,33092 \text{ моль}$$



2-тапсырма



$$m(\text{FeO}) = (242) 242 \quad n(\text{FeO}) = \frac{m}{M} = \frac{24}{72} = \frac{1}{3} \Rightarrow n(\text{Fe}_3\text{O}_4) = \frac{1}{3} = \frac{1}{9} \text{ моль}$$

$$Q_1 = 33,55 \text{ кДж} \quad m(\text{Fe}_3\text{O}_4) = n \cdot M = \frac{1}{9} \cdot 232 = \frac{232}{9}$$

$$m(\text{Fe}) = 11,22$$

$$Q_2 = 74,91 \text{ кДж}$$

$$\Delta H^\circ(\text{FeO}) = ?$$

$$\Delta H_{(p)}^\circ = \sum n(\text{продукт}) \Delta H^\circ(\text{продукт}) - \sum n(\text{исход}) \Delta H^\circ(\text{исход}) \quad \sum = \frac{m \cdot c \cdot z}{m \cdot e}$$

$$\Delta H_{(p)}^\circ = \frac{24}{216+32} \cdot \frac{1}{3} \cdot \Delta H^\circ - \frac{168 \cdot 9}{232} \cdot \frac{1}{9} \cdot 33,55 \text{ кДж}$$

$$\Delta H_{(p)}^\circ = \frac{24}{248} \cdot \frac{1}{3} \cdot 0 - 24,2946 \quad \Delta H_{(p)} = 0 - 24,2946$$

(O<sub>2</sub> - қарапайым зат, демек стандартты түзілу жылуы = 0)

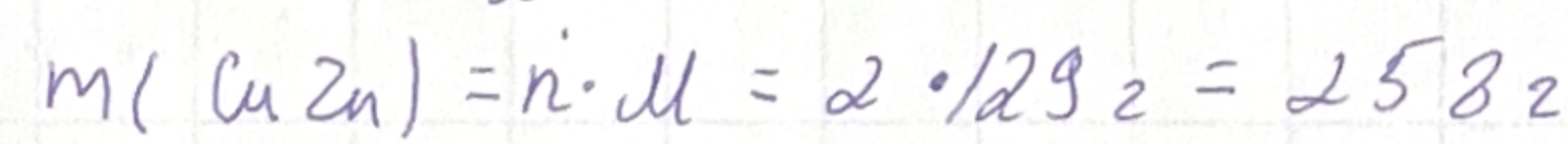
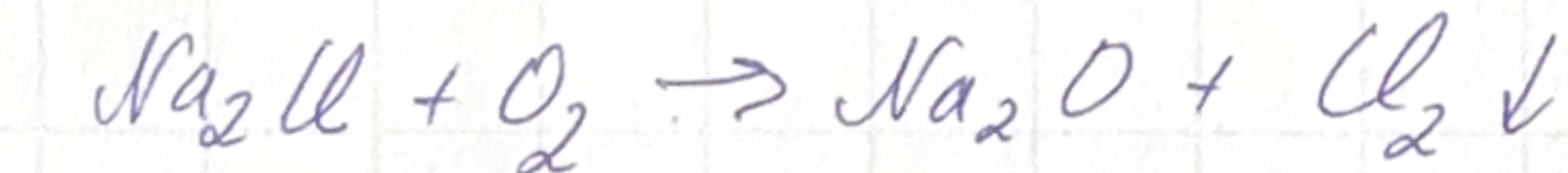
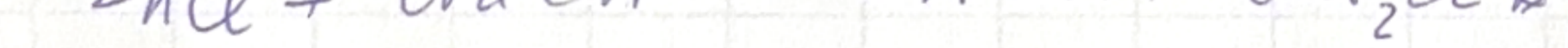
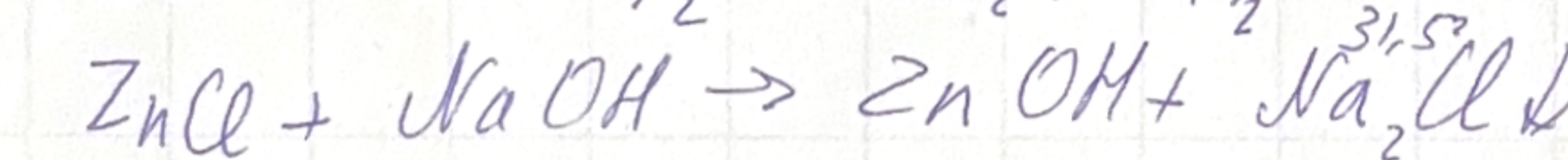
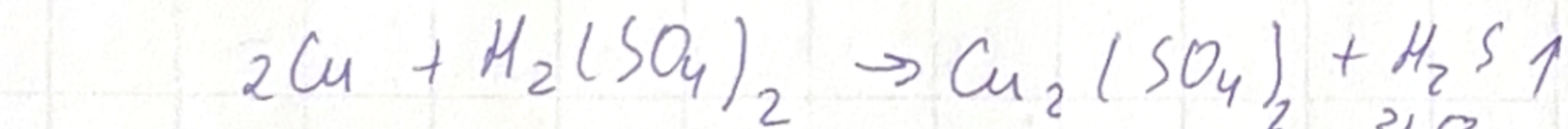
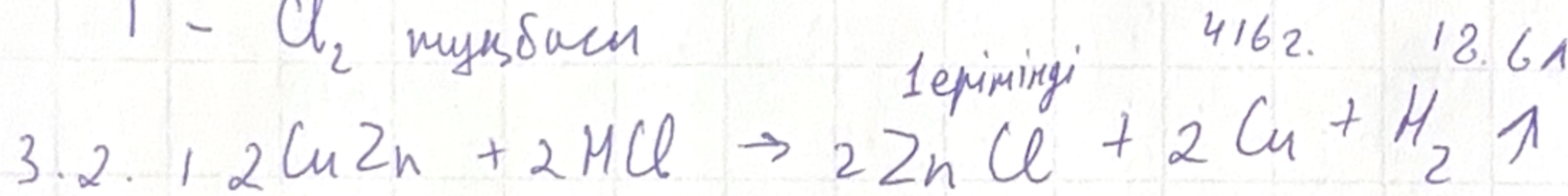
3-тапсырма

3.1. А - H<sub>2</sub> газы

Б - H<sub>2</sub>S ↑

В - Na<sub>2</sub>Cl жасыл түсті тұзда

Г - Cl<sub>2</sub> тұзбасы



1.1. X = карбокат немесе нитрат

Y = S<sub>2</sub>

C = F

A = Cr<sub>2</sub>

D = CO<sub>2</sub>

B = O<sub>2</sub>

E = S



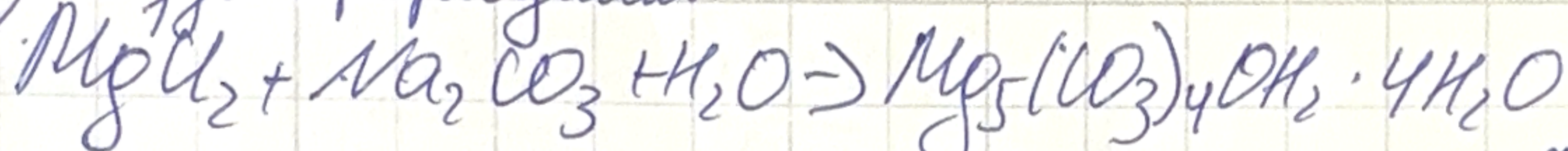
№1 есеп

Берілгені:

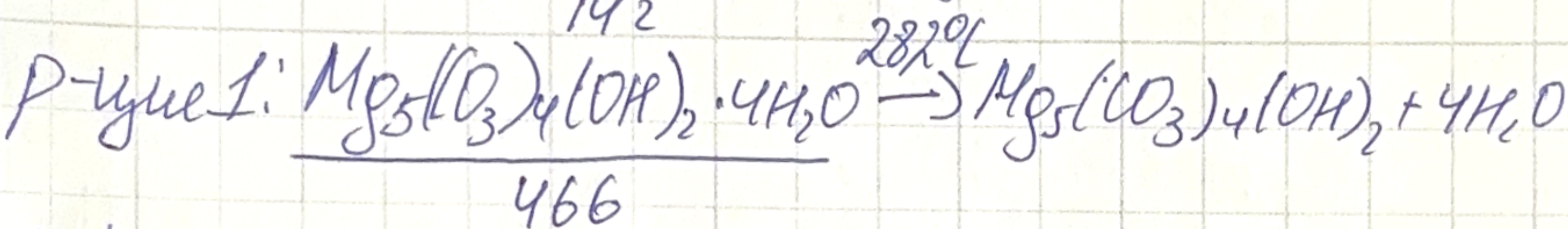
Атқызол - спорттық маңызына келіп синтезделген гидратацияланған магнезит - уақыт келтіруге және соның сақдалуына ұстау селіңдісінің ортасына арналған магнезит тұз болып табылатын ауқым.

Табу керек: Атқызол мен Вэзатолдың маңызына орнату маңызы?

Шешуі: 1) Атқызол орнатуы:



2) 282°C температурада дейін уақыт келтіріп, массасы 15.41% металл

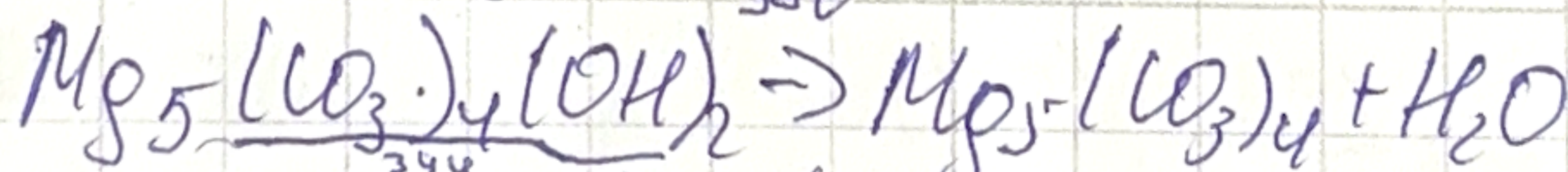


$$M(\text{Mg}_5(\text{CO}_3)_4(\text{OH})_2 \cdot 4\text{H}_2\text{O}) = 24.5 + (12 + 16 \cdot 3) \cdot 4 + (1 + 16) \cdot 2 + (2 \cdot 1 + 16) \cdot 4 = 466 \text{ г/моль}$$

$$\begin{matrix} 100\% - 142 \\ 15.41\% - X \end{matrix} \quad X = \frac{14 \cdot 15.41}{100} = 2.15742 \rightarrow \text{металлдың массасы}$$

3) 350°C температурада тұздың бастапқы маңызына 3.86% металл

Р-цисе 2:

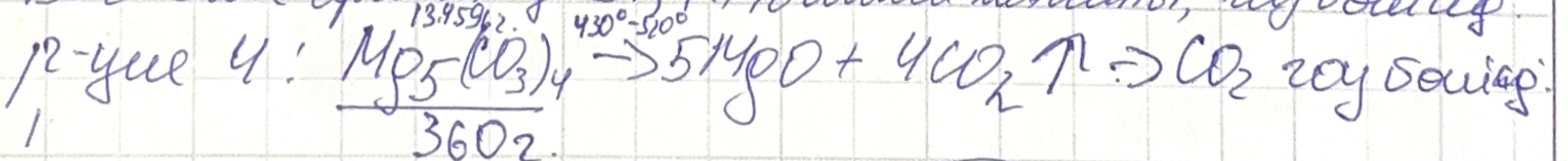


$$M(\text{Mg}_5(\text{CO}_3)_4(\text{OH})_2) = 24.5 + (12 + 16 \cdot 3) \cdot 4 + (1 + 16) \cdot 2 = 394 \text{ г/моль}$$

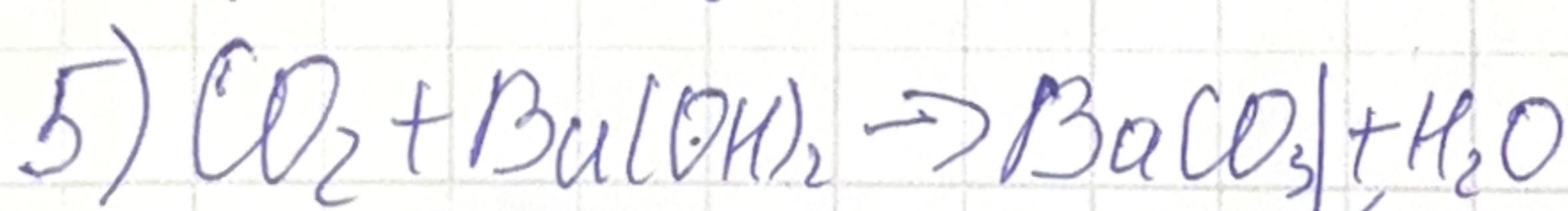
$$\begin{matrix} 142 - 100\% \\ X - 3.86\% \end{matrix} \quad X = \frac{14 \cdot 3.86}{100} = 0.54042 \rightarrow \text{металлдың массасы}$$

$$14 - 0.54042 = 13.45958$$

4) 430°C - 520°C аралығында 37.77% масса металл, газ бөлініс



$$\begin{matrix} 13.45958 - 100\% \\ X - 37.77\% \end{matrix} \quad X = \frac{13.45958 \cdot 37.77}{100} = 5.08362$$



ММ: Атқызол -  $\text{Mg}_5(\text{CO}_3)_4(\text{OH})_2 \cdot 4\text{H}_2\text{O}$   
Вэзатол:  $\text{BaCO}_3$  ауқым