



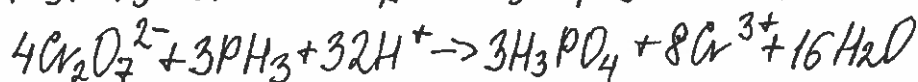
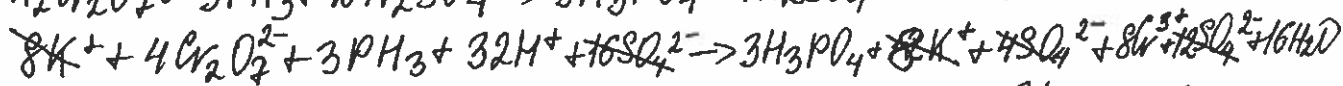
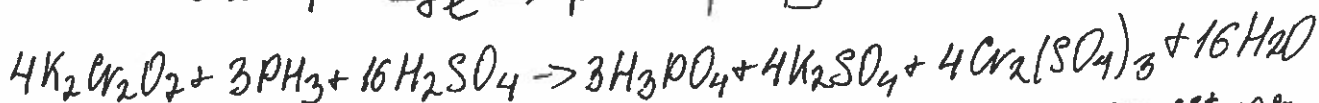
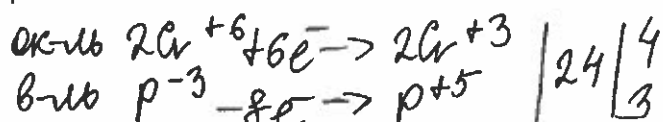
Вариант № 1

Оценка выполнения олимпиадной работы
(заполняется проверяющим)

№ задания	1	2	3	4	5	6	7	8	9	10	Σ
Полученный балл	5	8	0	12	23	4					52
I проверка				Σ баллов прописью	пятнадцать два						
Подпись проверяющего				Σ баллов прописью	пятнадцать два						
II проверка				Σ баллов прописью	пятнадцать два						
Подпись проверяющего				Σ баллов прописью	пятнадцать два						

Задание 1

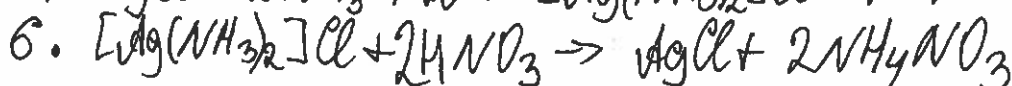
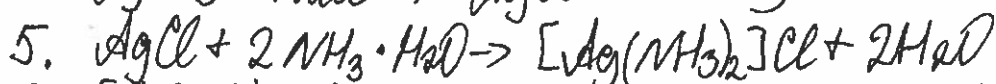
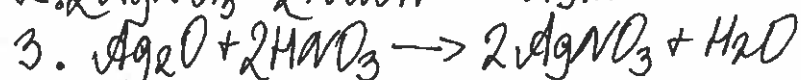
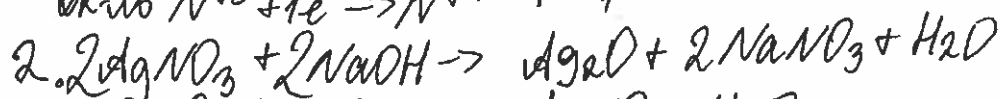
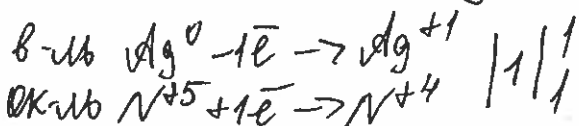
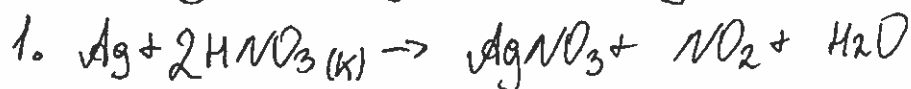
5



Задание 2

8

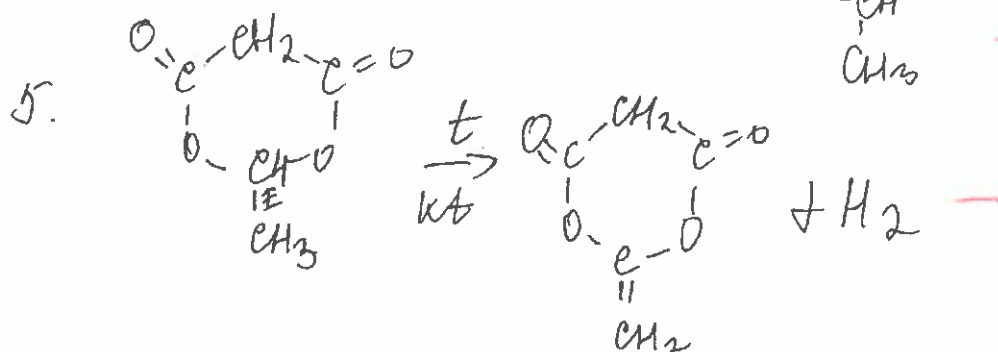
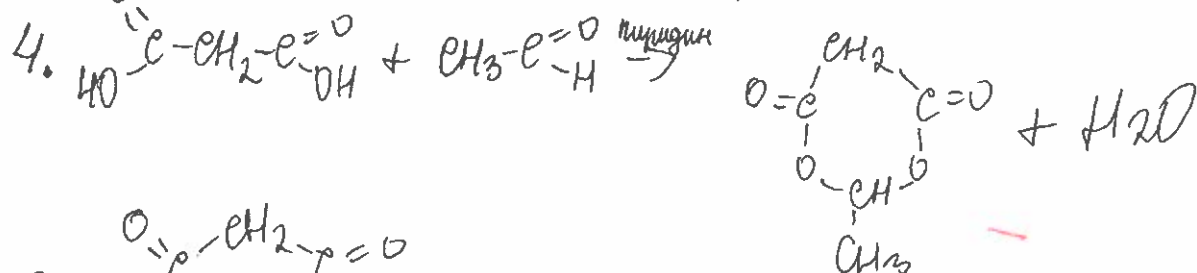
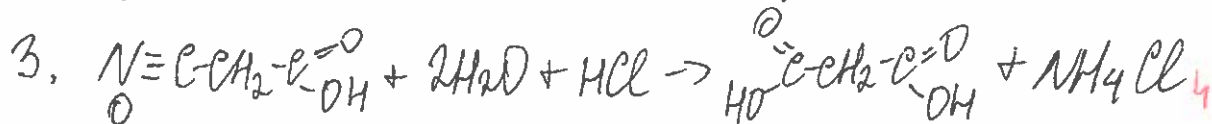
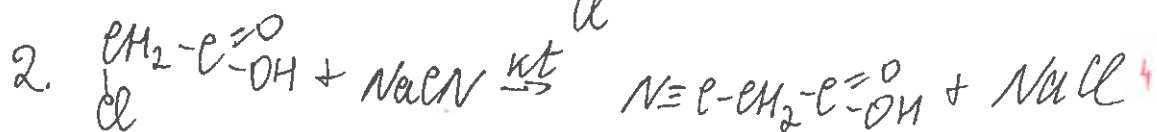
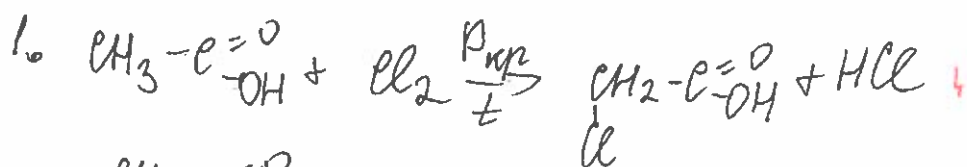
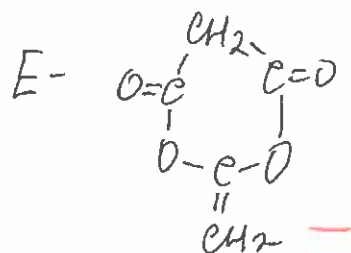
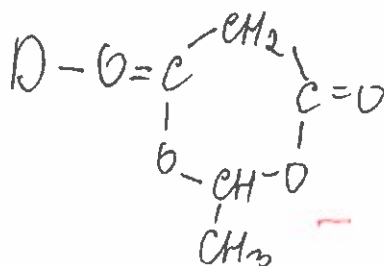
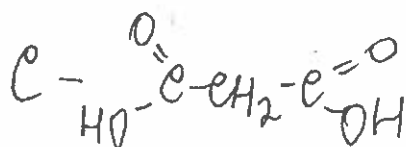
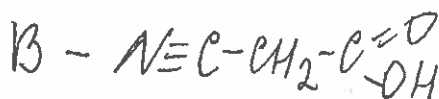
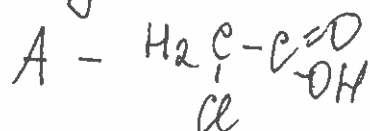
A - Ag B - Ag₂O C - AgNO₃ D - [Ag(NH₃)₂]Cl





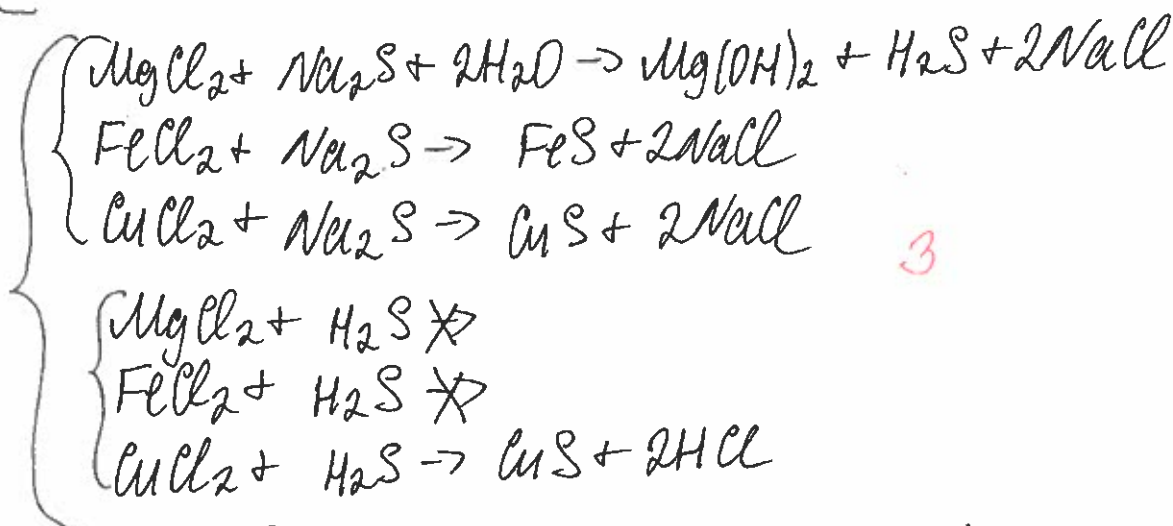
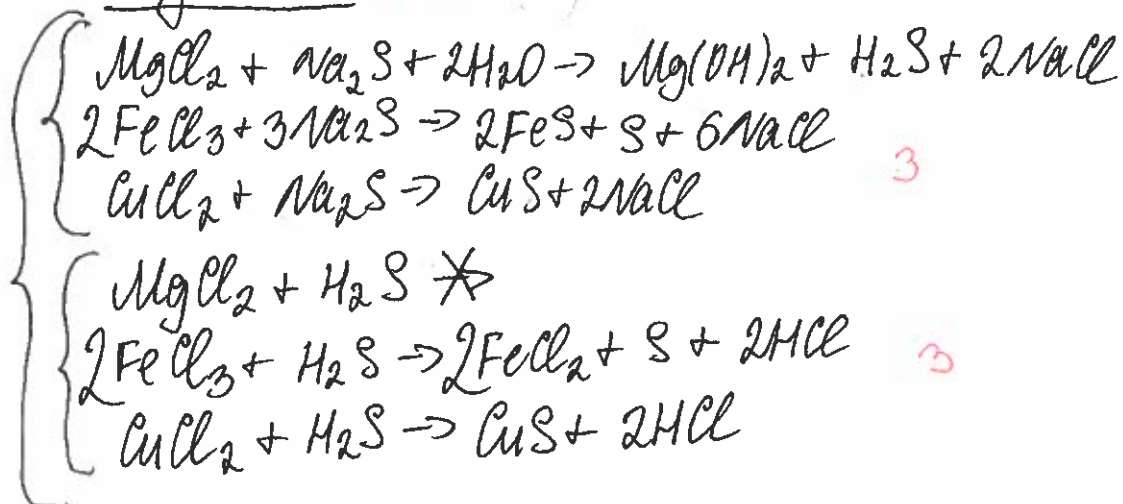
Вариант № 1

Задание 4 12



Вариант № 1

Задание 5 **23**



Пусть $\nu(\text{хлоридов}) = 1 \text{ моль}$, $\nu(\text{MgCl}_2) = x \text{ моль}$,

$\nu(\text{FeCl}_3) = y \text{ моль}$, $\Rightarrow \nu(\text{CuCl}_2) = (1 - x - y) \text{ моль}$

$$\frac{\nu(\text{MgCl}_2)}{\nu(\text{Mg}(\text{OH})_2)} = \frac{1}{1} \Rightarrow \nu(\text{Mg}(\text{OH})_2) = x \text{ моль} \Rightarrow m(\text{Mg}(\text{OH})_2) = M \cdot \nu = 58x \text{ г}$$

$$\frac{\nu(\text{FeCl}_3)}{\nu(\text{FeS})} = \frac{1}{1} \Rightarrow \nu(\text{FeS}) = y \text{ моль} \Rightarrow m(\text{FeS}) = M \cdot \nu = 88y \text{ г}$$

$$\frac{\nu(\text{FeCl}_3)}{\nu(\text{FeS})} = \frac{2}{1} \Rightarrow \nu(\text{S}) = 0,5y \text{ моль} \Rightarrow m(\text{S}) = 16y \text{ г}$$



Вариант № 1

$$\frac{\nu(\text{CuCl}_2)}{\nu(\text{CuS})} = \frac{1}{1} \Rightarrow \nu(\text{CuS}) = (1-x-y) \text{ моль} \Rightarrow m(\text{CuS}) = M \cdot \nu = 96(1-x-y) \text{ г}$$

$$\frac{\nu(\text{FeCl}_2)}{\nu(\text{S})} = \frac{2}{1} \Rightarrow \nu(\text{S}) = 0,5y \text{ моль} \Rightarrow m(\text{S}) = 16y \text{ г}$$

$$\frac{\nu(\text{FeCl}_2)}{\nu(\text{FeS})} = \frac{1}{1} \Rightarrow \nu(\text{FeS}) = y \text{ моль} \Rightarrow m(\text{FeS}) = M \cdot \nu = 88y \text{ г}$$

$$\begin{cases} \frac{58x + 88y + 16y + 96(1-x-y)}{16y + 96(1-x-y)} = 5 \\ \frac{58x + 88y + 96(1-x-y)}{96(1-x-y)} = 6 \end{cases}$$

$$\begin{cases} \frac{58x + 8y + 96 - 96x}{-80y + 96 - 96x} = 5 & \begin{cases} -38x + 8y + 96 = -400y + 480 - 480x \\ -38x - 8y + 96 = 576 - 576x - 576y \end{cases} \\ \frac{-38x - 8y + 96}{96 - 96x - 80y} = 6 & \begin{cases} 442x = 384 - 408y \\ 538x = 480 - 568y \end{cases} \end{cases}$$

$$x = 0,868778 - 0,923y$$

$$538(0,868778 - 0,923y) = 480 - 568y$$

$$467,4 - 496,576y = 480 - 568y$$

$$71,426y = 12,6$$

$$y = 0,1764 \Rightarrow \nu(\text{FeCl}_2) = 0,1764 \text{ моль}$$

$$538x = 480 - 568 \cdot 0,1764$$

$$x = 0,706 \Rightarrow \nu(\text{HgCl}_2) = 0,706 \text{ моль}$$

$$\nu(\text{CuCl}_2) = 1 - 0,1764 - 0,706 = 0,1176 \text{ моль}$$

и сумма
ошибок в вычислениях



Вариант № 1

$$m(\text{MgCl}_2) = m \cdot \omega = 95\% \text{ шмш} \cdot 0,706 \text{ шмш} = 67,072$$

$$m(\text{FeCl}_3) = m \cdot \omega = 162,5\% \text{ шмш} \cdot 0,1764 \text{ шмш} = 28,6652$$

$$m(\text{CuCl}_2) = m \cdot \omega = 135\% \text{ шмш} \cdot 0,1146 \text{ шмш} = 15,8762$$

$$m(\text{см}) = 67,072 + 28,6652 + 15,8762 = 111,6112$$

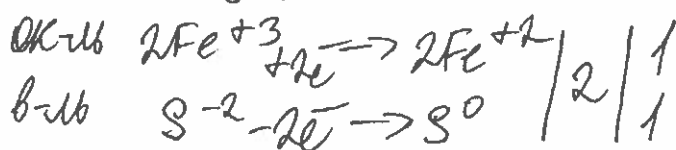
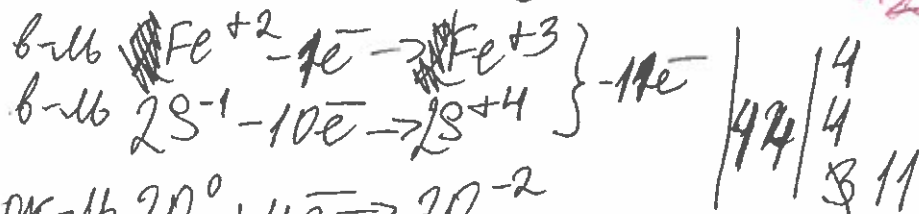
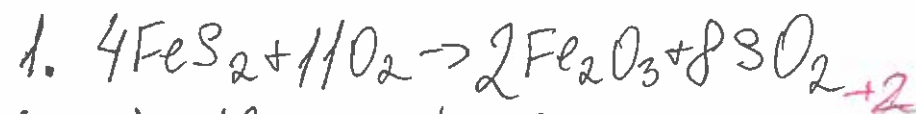
$$\omega(\text{MgCl}_2) = \frac{m(\text{MgCl}_2)}{m(\text{см})} \cdot 100\% = \frac{67,072}{111,6112} \cdot 100\% = 60,1\%$$

$$\omega(\text{FeCl}_3) = \frac{m(\text{FeCl}_3)}{m(\text{см})} \cdot 100\% = \frac{28,6652}{111,6112} \cdot 100\% = 25,7\%$$

$$\omega(\text{CuCl}_2) = \frac{m(\text{CuCl}_2)}{m(\text{см})} \cdot 100\% = \frac{15,8762}{111,6112} \cdot 100\% = 14,2\%$$

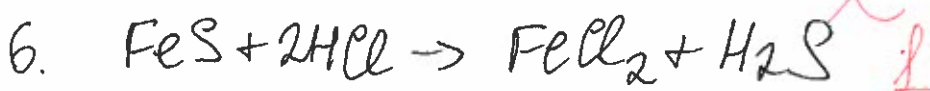
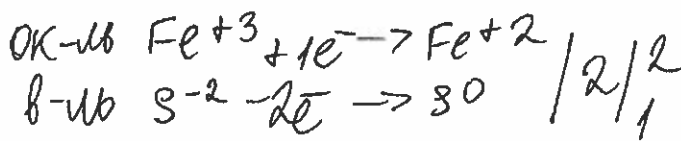
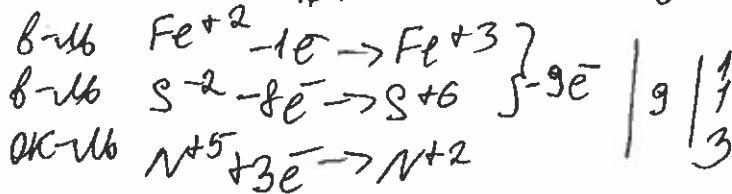
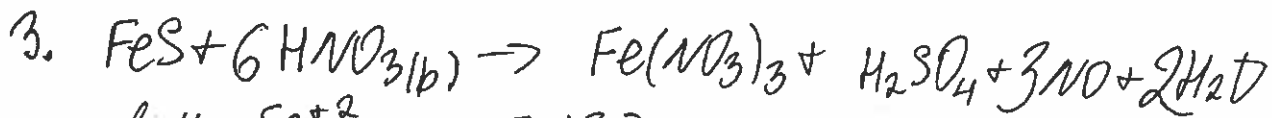
Ответ: $\omega(\text{MgCl}_2) = 60,1\%$; $\omega(\text{FeCl}_3) = 25,7\%$; $\omega(\text{CuCl}_2) = 14,2\%$

Задача 6 4



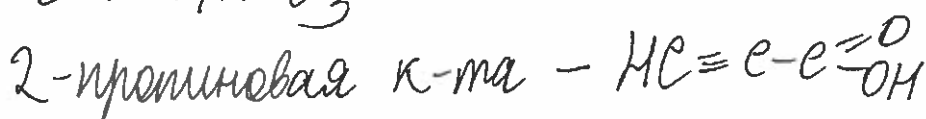
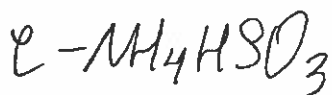
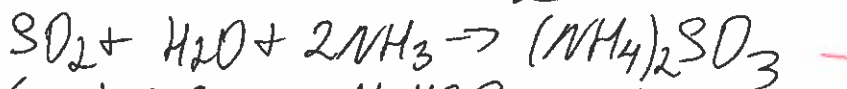


Вариант № 1



Исходный состав - OH^-

Задание 3 0





Вариант № 1

Задание 2 + 4

