

First Bullet

$$-4 \cdot 10^{-5} + 5 \frac{121}{121+120} = 5 \frac{121}{121+120+x}$$

$$0 + 2.51 = 5 \frac{121}{241+x} \rightarrow 241+x$$

$$(241+x)2.51 = 605$$

$$604.91 + 2.51x = 605$$

$$-604.91 \quad -604.91$$

$$2.51x = 0.09$$

$$\frac{2.51}{2.51} \quad \frac{0.09}{2.51}$$

$$x = 0.04$$

$\Delta R_1 = 0.04$

Second bullet \rightarrow Mass required to get to a charge of 20mV

$$\frac{\text{mass} - y \cdot \text{int}}{m} \rightarrow \frac{240 - 0.01473}{0.002379} = 100,876$$

mass y · int
mass mass

$\frac{121}{121+120} = \frac{121}{241}$
 $\frac{170}{241}$

$-4 \cdot 10^{-5} + 5 \frac{121}{121+120} = 5 \frac{121}{121+120+\Delta R_1}$
 $-4 \cdot 10^{-5} + 2.51 = 5 \frac{121}{121+120+\Delta R_1}$
 $241 + \Delta R_1 \cdot 2.51 = 5 \frac{121}{241 + \Delta R_1} \cdot 241 + \Delta R_1$
 $-2.51(241 + \Delta R_1) = 5 \cdot 121$
 $-604.91 + 2.51x = 605$
 $-604.91 \quad -604.91$

 $2.51x = 0.09$

$\frac{220 - 0.01473}{0.002379} = 92469 \cdot \left\{ \frac{8407}{1000} = 8.49 \right\}$