③ 150 mM NaCl ≡ $\frac{150 \text{ millimoles NaCl}}{1{,}000 \text{ ml}}$

Since 1 millimole NaCl weighs 58.5 mg

150 " " " 150 × (58.5 mg)

= 8,775 mg

So, add $\frac{8{,}775 \text{ mg NaCl}}{1{,}000 \text{ ml}}$ (OR $\frac{8.775 \text{ g NaCl}}{1{,}000 \text{ ml}}$)

④ .5 M $C_{12}H_{22}O_{11}$ ≡ $\frac{.5 \text{ moles } C_{12}H_{22}O_{11}}{1{,}000 \text{ ml}}$

Since 1 mole of $C_{12}H_{22}O_{11}$ weighs:

C_{12}: 12 × 12 = 144
H_{22}: 1 × 22 = 22
O_{11}: 16 × 11 = 176
342

1 mole $C_{12}H_{22}O_{11}$ weighs 342 g

So .5 mole " " .5 × (342 g) = 171 g

So, add $\frac{171 \text{ g } C_{12}H_{22}O_{11}}{1{,}000 \text{ ml}}$