Table 1: Principal Electrolytes of the Body Fluids

extracellular fluid*		intracellular fluid†	
Cations (+ electrical charge)			
Sodium (Na^+)	142 mEq/l‡	sodium (Na^+)	10 mEq/l
Potassium (K^+)	4 mEq/l	potassium (K^+)	160 mEq/l
Calcium (Ca^{2+})	5 mEq/l	magnesium (Mg^{2+})	35 mEq/l
Magnesium (Mg^{2+})	3 mEq/l		
Total	154 mEq/l	total	205 mEq/l
Anions (− electrical charge)			
Chloride (Cl^-)	103 mEq/l	chloride (Cl^-)	2 mEq/l
Bicarbonate (HCO_3^-)	27 mEq/l	bicarbonate (HCO_3^-)	8 mEq/l
Phosphate (PO_4^{3-})	2 mEq/l	phosphate (PO_4^{3-})	140 mEq/l
Sulfate (SO_4^{2-})	1 mEq/l		
Protein	16 mEq/l		
Organic acid	5 mEq/l	protein	55 mEq/l
Total	154 mEq/l	total	205 mEq/l

*Approximate values in the blood plasma. †Approximate values for the muscle cells. ‡mEq/l = milliequivalents per litre.

Make the calculations to fill the table below. Assume the volume of blood is 500 mL and that the density of blood is 1.05 g/cm³

Electrolyte	mEq/L	M (mol/L)	mol	mass (grams)	% (m/m)	% (m/v)	ppm or mcg/mL	
			(=Mx0.5L)	(=mol x MM)	(=g/(500*1.05)*100)			
Na^+	142							*round to 3 sig figs*
K^+	4							*round to 1 sig fig*
Ca^{2+}	5							*round to 1 sig fig*
Cl^-	103							*round to 3 sig figs*
Mg^{2+}	3							*round to 1 sig fig*
Mg^{2+}	35							*round to 2 sig figs*
PO_4^{3-}	140							*round to 3 sig figs*

Electrolyte	mEq/L	M (mol/L)	mol	mass (grams)	% (m/m)	% (m/v)	ppm or mcg/mL	
Na^+	142	0.142	0.0710	1.63	0.311%	0.326%	3.26E+03	*round to 3 sig figs*
K^+	4	0.004	0.002	0.08	0.015%	0.016%	1.6E+02	*round to 1 sig fig*
Ca^{2+}	5	0.0025	0.001	0.05	0.0095%	0.010%	1.0E+02	*round to 1 sig fig*
Cl^-	103	0.103	0.0515	1.83	0.348%	0.365%	3.65E+03	*round to 3 sig figs*
Mg^{2+}	3	0.0015	0.0008	0.02	0.003%	0.004%	4.E+01	*round to 1 sig fig*
Mg^{2+}	35	0.018	0.0088	0.21		0.043%	4.3E+02	*round to 2 sig figs*
PO_4^{3-}	140	0.0467	0.0233	2.22		0.443%	4.43E+03	*round to 3 sig figs*