



QT Standard Form Word Problems

1. The number of atoms in one kilogram of helium is 1.53×10^{26} . Calculate the number of atoms in 30 kilograms of helium. Give your answer in standard form.

$$1.53 \times 10^{26} \times 30$$

$$45.9 \times 10^{26}$$

$$\underline{\underline{4.59 \times 10^{27}}}$$

$$\begin{array}{r} 1.53 \\ \times 30 \\ \hline 45.90 \end{array}$$

2. In 2015 the population of the United Kingdom was 6.4×10^7
In 2015 the population of Sweden was 9.7×10^6

(i) Work out the combined population of the United Kingdom and Sweden.
Give your answer in standard form.

$$\begin{array}{r} 64000000 \\ 97000000 + \\ \hline 73700000 \end{array}$$

$$\underline{\underline{7.37 \times 10^7}}$$

(ii) Work out the difference between the population of the United Kingdom and the population of Sweden in 2015. Give your answer in standard form.

$$\begin{array}{r} 64000000 - \\ 97000000 \\ \hline 54300000 \end{array}$$

$$\underline{\underline{5.43 \times 10^7}}$$



3. It takes 8 minutes for light to travel from the Sun to the Earth.
The speed of light is 3×10^8 metres per second.

Work out the distance, **in kilometres**, from the Sun to the Earth. Give your answer in standard form.

$$300000000 \text{ m/s}$$

$$300000 \text{ km/s}$$

$$300000 \times 60 \text{ km/m}$$

$$18000000 \text{ km/m}$$

$$180000000 \times 8$$

$$144000000 \text{ distance km}$$

$$\underline{\underline{1.44 \times 10^8}} \text{ km}$$

$$\begin{array}{r} 18 \\ \times 8 \\ \hline 144 \end{array}$$