Scientific Notation / Sig Figs

Total /20

1a) 7.925×10^{22} ✓ b) 8.99×10^{-5} ✓ /4

2 a) 3.2×10^{8}
$= 320{,}000{,}000$ ✓

b) 1×10^{-3}
$= 0.001$ ✓ /2

3 a) $4.2 \times 10^{10} \times 3 \times 10^{-2}$
$= 12.6 \times 10^{8}$ ✓
$= 1.26 \times 10^{9}$ ✓

b) $\dfrac{4.2 \times 10^{5}}{8 \times 10^{-1}}$
$= \dfrac{4.2}{8} \times 10^{6}$
$= 0.525 \times 10^{6}$
$= 5.25 \times 10^{5}$ ✓

$$\begin{array}{r} 0.525 \\ 8\overline{)4.2^{2}0^{4}0} \end{array}$$

c) $\dfrac{(3.2 \times 10^{2}) \times (4.5 \times 10^{-3})}{3 \times 10^{-6}}$

$= \dfrac{4.8 \times 10^{-1}}{10^{-6}}$

$= 4.8 \times 10^{5}$ ✓

$\Rightarrow$
$$\begin{array}{r} 3.2 \\ \times\ 4.5 \\ \hline 160 \\ 12{,}80 \\ \hline 14.40 \\ \hline \end{array}$$

$$\begin{array}{r} 4.8 \\ 3\overline{)14.^{2}4} \end{array}$$

/6

4 $93 \times 10^{6} \times 5.2$ ✓
$= 483.6 \times 10^{6}$
$= 4.836 \times 10^{8}$ ✓

$$\begin{array}{r} 93 \\ \times\ 5.2 \\ \hline 1{,}86 \\ 46{,}50 \\ \hline 483.6 \\ \hline \end{array}$$

/2

5 $1.2 \times 10^{8} \div 365$ ✓
$=$ £328767.123..
$=$ £328,767 ✓ /2

6. a) $8.4 \div (9.6 - 5.7)$
$= 2.153...$
$= 2.15$ ✓ (to 3sf)

b) $20 \times (2.1 \div 5.9)$
$= 7.118...$
$= 7.12$ ✓ (to 3sf)

c) $\frac{58}{(1.2 \times 14)}$

$= 3.452\ldots$

$= 3.45$ (to 3sf)

d) 2500×1.04^3

$= 2852.16$

$= 2850$ (to 3sf)

/4