

14. (a) Write  $6.43 \times 10^5$  as an ordinary number.

$$6.43000$$

$$\underline{\underline{643,000}}$$

(1)

(b) Work out the value of  $2 \times 10^7 \times 8 \times 10^{-12}$   
Give your answer in standard form.

$$8 \times 2 = 16$$

$$7 - 12 = -5$$

$$16 \times 10^{-5}$$

$$= 1.6 \times 10^{-4}$$

$$\underline{\underline{1.6 \times 10^{-4}}}$$

(2)

(Total 3 marks)

13. (a) Work out the value of  $(6 \times 10^8) \times (4 \times 10^7)$

Give your answer in standard form.

$$6 \times 4 = 24$$

$$8 + 7 = 15$$

$$24 \times 10^{15}$$

$$= 2.4 \times 10^{16}$$

$$\underline{\underline{2.4 \times 10^{16}}}$$

(b) Work out the value of  $(6 \times 10^8) + (4 \times 10^7)$

Give your answer in standard form.

$$\begin{array}{r} 6000000000 \\ 4000000000 \\ \hline 6400000000 \end{array} = 6.4 \times 10^8$$

19. The surface area of Earth is  $510\,072\,000\text{ km}^2$ .  
The surface area of Jupiter is  $6.21795 \times 10^{10}\text{ km}^2$ .

The surface area of Jupiter is greater than the surface area of Earth.  
How many times greater?  
Give your answer in standard form.

$$\frac{6.21795 \times 10^{10}}{5.10072 \times 10^8} = 121.9033$$
$$\approx \underline{\underline{1.219033 \times 10^2}}$$

17. (a) Write 82 500 000 in standard form.

$$8.25 \times 10^7$$

(1)

(b) Work out  $(5.2 \times 10^{-7}) \times (2.8 \times 10^{-9})$

Give your answer in standard form.

$$(5.2 \times 2.8) = 14.56$$

$$(-7) + (-9) = -16$$

$$14.56 \times 10^{-16}$$

$$\approx 1.456 \times 10^{-15}$$

$$1.456 \times 10^{-15}$$

(2)

(Total 3 marks)

18. (a) Write 15 500 in standard form.

$$1.55 \times 10^4$$

(1)

(b) Write  $2.48 \times 10^{-3}$  as an ordinary number.

$$0.00248$$

$$0.00248$$

(1)

(c) Work out the value of

$$\underline{24\,500} \div (1.25 \times 10^{-4})$$

Give your answer in standard form.

$$\frac{(2.45 \times 10^4)}{(1.25 \times 10^{-4})} = 196\,000\,000$$
$$= 1.96 \times 10^8$$

$$1.96 \times 10^8$$

(2)

