**1.** (a) Write the number 0.00037 in standard form.

**(1)**

.....................................~~PhysicsAndMaths~~.....

(b) Write $8.25 \times 103$ as an ordinary number.

**(1)**

..........................................................................

(c) Work out $(2.1 \times 10^8) \times (6 \times 10^{-5})$.
Write your answer in standard form.

**(2)**

..........................................................................

**(4 marks)**

---

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

.....................................

**(1)**

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

.....................................

**(2)**

**(3 marks)**

---

**3.** (a) Write down the value of $10^0$

......................................................
**(1)**

(b) Write $6.7 \times 10^{-5}$ as an ordinary number.

......................................................
**(1)**

(c) Work out the value of $(3 \times 10^7) \times (9 \times 10^6)$
Give your answer in standard form.

......................................................
**(2)**

**(4 marks)**

**4.** (a) Write $8.2 \times 10^5$ as an ordinary number.

......................................................
**(1)**

(b) Write 0.000 376 in standard form.

......................................................
**(1)**

(c) Work out the value of $(2.3 \times 10^{12}) \div (4.6 \times 10^3)$
Give your answer in standard form.

......................................................
**(2)**

**(4 marks)**

_____

**5.** A floppy disk can store 1 440 000 bytes of data.

(a) Write the number 1 440 000 in standard form.

………………………………………

**(1)**

A hard disk can store $2.4 \times 10^9$ bytes of data.

(b) Calculate the number of floppy disks needed to store the $2.4 \times 10^9$ bytes of data.

………………………………………

**(3)**

**(4 marks)**

_____

**6.** (a) (i) Write 40 000 000 in standard form.

...................................

(ii) Write $3 \times 10^{-5}$ as an ordinary number.

...................................

**(2)**

(b) Work out the value of

$$3 \times 10^{-5} \times 40\ 000\ 000$$

Give your answer in standard form.

...................................

**(2)**

**(4 marks)**

_____

**7.** (a) Write the number 40 000 000 in standard form.

..................................
**(1)**

(b) Write $1.4 \times 10^{-5}$ as an ordinary number.

..................................
**(1)**

(c) Work out

$$(5 \times 10^4) \times (6 \times 10^9)$$

Give your answer in standard form.

..................................
**(2)**
**(4 marks)**

_____

**8.** (a) Write $6.4 \times 10^4$ as an ordinary number.

..................................................................
**(1)**

(b) Write 0.0039 in standard form.

..................................................................
**(1)**

(c) Write $0.25 \times 10^7$ in standard form.

..................................................................
**(1)**

(d) Work out $(3.2 \times 10^5) \times (4.5 \times 10^4)$ in standard form.

..................................................................
**(2)**

**(5 marks)**

_____

**9.** (a) (i) Write 7900 in standard form.

..................................

(ii) Write 0. 00035 in standard form.

..................................
**(2)**

(b) Work out $\dfrac{4 \times 10^3}{8 \times 10^{-5}}$

Give your answer in standard form.

..................................
**(2)**
**(4 marks)**

_____

**10.** (a) Write 30 000 000 in standard form.

..........................................
**(1)**

(b) Write $2 \times 10^{-3}$ as an ordinary number.

..........................................
**(1)**
**(2 marks)**

_____

**11.** (a) Write $5.7 \times 10^{-4}$ as an ordinary number.

.......................................
**(1)**

(b) Work out the value of $(7 \times 10^4) \times (3 \times 10^5)$

Give your answer in standard form.

.......................................
**(2)**
**(3 marks)**

_____

**12.** Write the following numbers in order of size.
Start with the smallest number.

$$0.038 \times 10^2 \qquad 3800 \times 10^{-4} \qquad 380 \qquad 0.38 \times 10^{-1}$$

......................................................................................................................................................

**(2 marks)**
_____

**13.** The time taken for light to reach Earth from the edge of the known universe is 14 000 000 000 years.

Light travels at the speed of $9.46 \times 10^{12}$ km/year.

Work out the distance, in kilometres, from the edge of the known universe to Earth.
Give your answer in standard form.

………………………………… km

**(3 marks)**
_____

**14.** The surface area of Earth is 510 072 000 km$^2$.
The surface area of Jupiter is $6.21795 \times 1010$ 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.

...........................................

**(3 marks)**
_____

**15.** $$p^2 = \frac{x-y}{xy}$$

$x = 8.5 \times 10^9$
$y = 4 \times 10^8$

Find the value of $p$.
Give your answer in standard form correct to 2 significant figures.

...............................................

**(4 marks)**

_____

**16.** $$y^2 = \frac{ab}{a+b}$$

$a = 3 \times 10^8$
$b = 2 \times 10^7$

Find $y$.
Give your answer in standard form correct to 2 significant figures.

$y = $ ..................................

**(4 marks)**

_____