

# Standard Form

25 marks

1. A spaceship travelled for  $6 \times 10^2$  hours at a speed of  $8 \times 10^4$  km/h.

- (a) Calculate the distance travelled by the spaceship.  
Give your answer in standard form.

..... km (3)

One month an aircraft travelled  $2 \times 10^5$  km.  
The next month the aircraft travelled  $3 \times 10^4$  km.

- (b) Calculate the total distance travelled by the aircraft in the two months.  
Give your answer as an ordinary number.

..... km (2)  
(Total 5 marks)

2. (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)  
(Total 4 marks)

3. (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)  
(Total 4 marks)

4. Write in standard form

(a) 456 000

..... (1)

(b) 0.00034

..... (1)

(c)  $16 \times 10^7$

..... (1)  
(Total 3 marks)

5. 
$$x = \frac{p - q}{pq}$$

$$p = 4 \times 10^5$$
$$q = 1.25 \times 10^4$$

Calculate the value of  $x$ .  
Give your answer in standard form.

..... (Total 2 marks)

6. 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)  
(Total 4 marks)

7. 
$$y^2 = \frac{ab}{a+b}$$

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

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

$y =$  ..... (Total 3 marks)