

- 1** (a) Write  $2.46 \times 10^6$  as an ordinary number.

.....  
(1)

- (b) Write 0.000 74 in standard form.

.....  
(1)

- (c) Work out  $(5.6 \times 10^6) + (2.3 \times 10^5)$

.....  
(2)

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**(Total for Question 1 is 4 marks)**

- 2 (a) Write  $5.7 \times 10^{-3}$  as an ordinary number.

.....  
(1)

- (b) Write 800 000 in standard form.

.....  
(1)

- (c) Work out  $\frac{3 \times 10^5 - 2.7 \times 10^4}{6 \times 10^{-2}}$

.....  
(2)

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(Total for Question 2 is 4 marks)

3 The table shows information about the surface area of each of the world’s oceans.

Ocean	Surface area in square kilometres
Pacific	$1.56 \times 10^8$
Indian	$6.86 \times 10^7$
Southern	$2.03 \times 10^7$
Arctic	$1.41 \times 10^7$
Atlantic	$1.06 \times 10^8$

- (a) Work out the difference, in square kilometres, between the surface area of the Atlantic Ocean and the surface area of the Indian Ocean.  
Give your answer in standard form.

..... square kilometres  
(2)

The surface area of the Pacific Ocean is  $k$  times the surface area of the Arctic Ocean.

- (b) Work out the value of  $k$ .  
Give your answer correct to the nearest whole number.

$k =$  .....  
(1)

(Total for Question 3 is 3 marks)

- 4 (a) Write  $7.8 \times 10^{-4}$  as an ordinary number.

.....  
(1)

(b) Work out  $\frac{5.6 \times 10^4 + 7 \times 10^3}{2.8 \times 10^{-3}}$

Give your answer in standard form.

.....  
(2)

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**(Total for Question 4 is 3 marks)**

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5 The table shows the populations of five countries.

Country	Population
China	$1.4 \times 10^9$
Germany	$8.2 \times 10^7$
Sweden	$9.9 \times 10^6$
Fiji	$9.1 \times 10^5$
Malta	$4.3 \times 10^5$

- (a) Work out the difference between the population of China and the population of Germany.  
Give your answer in standard form.

.....  
(2)

Given that

population of Fiji =  $\frac{1}{k} \times$  population of Sweden

- (b) work out the value of  $k$ .  
Give your answer correct to the nearest whole number.

$k =$  .....  
(2)

- 6 The table gives the length of the coastline, in kilometres, of each of five oceans.

Ocean	Length of coastline (km)
Arctic	$4.539 \times 10^4$
Atlantic	$1.119 \times 10^5$
Pacific	$1.357 \times 10^5$
Indian	$6.653 \times 10^4$
Southern	$1.797 \times 10^4$

- (a) Which ocean has the greatest length of coastline?

.....  
(1)

- (b) Calculate the difference between the length of the Atlantic Ocean's coastline and the length of the Southern Ocean's coastline.  
Give your answer in standard form.

..... km  
(2)

(Total for Question 6 is 3 marks)

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7 (a) Write 2 840 000 000 in standard form.

.....  
(1)

(b) Write  $2.5 \times 10^{-4}$  as an ordinary number.

.....  
(1)

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**(Total for Question 7 is 2 marks)**

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8 (b) Work out  $\frac{9.6 \times 10^5 + 6.4 \times 10^5}{3.2 \times 10^{16}}$

Give your answer in standard form.

.....  
(3)

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**(Total for Question 8 is 3 marks)**

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- 9 The table gives information about the population, correct to 2 significant figures, of each of five cities in 2018

City	Population (2018)
Ahmedabad	$7.7 \times 10^6$
Barcelona	$5.5 \times 10^6$
Chicago	$8.8 \times 10^6$
Lagos	$1.3 \times 10^7$
Tokyo	$3.7 \times 10^7$

- (a) Write  $8.8 \times 10^6$  as an ordinary number.

.....  
(1)

- (b) Which of these cities had the least population in 2018?

.....  
(1)

- (c) Work out the difference between the population of Tokyo and the population of Ahmedabad in 2018  
Give your answer in standard form correct to 2 significant figures.

.....  
(2)

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(Total for Question 9 is 4 marks)

**10** (a) Write 0.000089 in standard form.

.....  
(1)

(b) Write  $8.34 \times 10^4$  as an ordinary number.

.....  
(1)

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**(Total for Question 10 is 2 marks)**

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

.....  
(1)

(b) Write 0.000 06 in standard form.

.....  
(1)

(c) Work out  $(4 \times 10^{512}) \div (1.6 \times 10^{700})$   
Give your answer in standard form.

.....  
(2)

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**(Total for Question 11 is 4 marks)**

**12**

$$a = 4.2 \times 10^{-24}$$

$$b = 3 \times 10^{145}$$

Work out the value of  $a \times b$

Give your answer in standard form.

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(Total for Question 12 is 2 marks)

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**13** (a) Write  $9.32 \times 10^{-5}$  as an ordinary number.

.....  
(1)

(b) Work out  $3 \times 10^5 - 6 \times 10^4$

Give your answer in standard form.

.....  
(2)

(c) Work out  $(3 \times 10^{55}) \times (6 \times 10^{65})$

Give your answer in standard form.

.....  
(2)

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**(Total for Question 13 is 5 marks)**

**14** (a) Write  $6.25 \times 10^{-4}$  as an ordinary number.

.....  
(1)

(b) Work out  $(2.4 \times 10^{12}) \div (9.6 \times 10^4)$   
Give your answer in standard form.

.....  
(2)

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**(Total for Question 14 is 3 marks)**

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**15** (a) Write  $5.6 \times 10^{-3}$  as an ordinary number.

.....  
(1)

(b) Work out  $\frac{6 \times 10^3}{2.1 \times 10 + 9 \times 10}$

Give your answer in standard form.

.....  
(2)

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**(Total for Question 15 is 3 marks)**

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**16 (b)** Find 4% of  $4.5 \times 10^{157}$

Give your answer in standard form.

.....  
(3)

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**(Total for Question 16 is 3 marks)**

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**17** (a) Write 76 000 000 in standard form.

.....  
(1)

(b) Write  $5.4 \times 10^{-4}$  as an ordinary number.

.....  
(1)

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**(Total for Question 17 is 2 marks)**

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