

1 (a) Write 1.2×10^5 as an ordinary number.

(b) Write 0.003 in standard form.

(1)

(1)

(Total for Question 1 is 2 marks)

2 (a) Write 42 900 000 in standard form.

(b) Write 3.61×10^{-3} as an ordinary number.

(1)

(1)

(Total for Question 2 is 2 marks)

3 (a) Write 9.516×10^6 as an ordinary number.

(b) Write 0.0724 in standard form.

(1)

(c) Calculate $(8.694 \times 10^2) \div (6.21 \times 10^{-3})$
Give your answer in standard form.

(1)

(2)

(Total for Question 3 is 4 marks)

4 (a) Write 5.12×10^{-5} as an ordinary number.

(b) Write 5 600 000 in standard form.

(1)

(1)

(Total for Question 4 is 2 marks)

5 (a) Write 0.0065 in standard form.

(b) Write 3×10^4 as an ordinary number.

(1)

(1)

(Total for Question 5 is 2 marks)

6 (a) Write 3.08×10^{-5} as an ordinary number.

(b) Write 5 million in standard form.

(1)

(c) Calculate $(6.3 \times 10^5) \times (2.5 \times 10^{-2})$
Give your answer in standard form.

(1)

(2)

(Total for Question 6 is 4 marks)

- 7 Work out $(8.69 \times 10^{-5}) \div (5.5 \times 10^{-7})$
Give your answer in standard form.

(Total for Question 7 is 2 marks)

- 8 (a) Write 0.00931 in standard form.

- (b) Write 7.429×10^3 as an ordinary number.

(1)

(1)

(Total for Question 8 is 2 marks)

- 9 (a) Write 5.2×10^{-1} as an ordinary number.

- (b) Work out the value of $(3.2 \times 10^3) \times (6.5 \times 10^4)$
Give your answer in standard form.

(1)

(2)

(Total for Question 9 is 3 marks)

- 10 Write 0.21×10^6 in standard form.

(Total for Question 10 is 1 mark)

- 11** Work out $(6.7 \times 10^4) \times (3.4 \times 10^{-8})$
Give your answer as an ordinary number.

(Total for Question 11 is 2 marks)

- 12** Work out $\frac{0.03 \times 0.02}{0.008}$
Give your answer in standard form.

(Total for Question 12 is 3 marks)

- 13** Work out $\frac{3.744 \times 10^9}{2.4 \times 10^5}$
Give your answer in standard form.

(Total for Question 13 is 2 marks)

- 14** Work out the value of $(5 \times 10^3) \times (6 \times 10^7)$
Give your answer in standard form.

(Total for Question 14 is 2 marks)

15 (a) Write 0.000 054 376 in standard form.

(b) Write 4.15×10^6 as an ordinary number.

(1)

(c) Work out $\frac{4.1 \times 10^5 \times 7.3 \times 10^4}{2 \times 10^{-6}}$

(1)

(2)

(Total for Question 15 is 4 marks)

16 Write these numbers in order of size.
Start with the smallest number.

$$6.1 \times 10^2$$

$$0.061 \times 10^2$$

$$6100 \times 10^{-4}$$

$$61$$

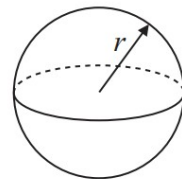
(Total for Question 16 is 2 marks)

17 A sphere has a radius of 6.4×10^6 metres.
Calculate the volume of this sphere.

Give your answer in standard form to 1 decimal place.

$$\text{Volume of sphere} = \frac{4}{3}\pi r^3$$

$$\text{Surface area of sphere} = 4\pi r^2$$



(Total for Question 17 is 3 marks)

- 18 A large rock has a weight of 1.2×10^4 grams.

Find, in standard form, the weight of 12 of these large rocks.

..... grams

(Total for Question 18 is 2 marks)

- 19 Write these numbers in order of size.
Start with the smallest number.

$$3.5 \times 10^2$$

$$0.035 \times 10^5$$

$$350 \times 10^{-2}$$

$$35 \times 10^0$$

(Total for Question 19 is 2 marks)

- 20 The diameter of Neptune is 5.0×10^4 km
The diameter of Mars is 6.8×10^3 km
Calculate the difference between the diameter of Neptune and the diameter of Mars.
Give your answer in standard form.

..... km

(Total for Question 20 is 2 marks)

- 21 One electron has a mass of 9.1×10^{-31} grams.

Find the mass of 250 of electrons.

..... grams

(Total for Question 21 is 2 marks)

- 22** The area of Australia is $7.7 \times 10^6 \text{ km}^2$
The area of Cyprus is $9.3 \times 10^3 \text{ km}^2$
How many times larger is Australia than Cyprus.
Give your answer to the nearest whole number.

(Total for Question 22 is 2 marks)

- 23** The area of the Pacific Ocean is $3.61 \times 10^8 \text{ km}^2$
The area of the Atlantic Ocean is $8.51 \times 10^7 \text{ km}^2$
Find the total area of the Pacific Ocean and the Atlantic Ocean.
Give your answer in standard form.

..... km^2
(Total for Question 23 is 2 marks)

- 24** The distance between Earth and Mars is 78 million kilometres.
The speed of light is $3 \times 10^5 \text{ km/s}$

Calculate the time, in seconds, it takes for light to travel from Earth to Mars.
Give your answer in standard form.

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(Total for Question 24 is 2 marks)