

Surname	
Other Names	
Candidate's Signature	

GCSE 9 - 1 Questions

Standard Form 2

Calculator Allowed

INSTRUCTIONS TO CANDIDATES

- Write your name in the space provided.
- Write your answers in the spaces provided in this question paper.
- Answer ALL questions.
- Any working should be clearly shown in the spaces provided since marks may be awarded for partially correct solutions.
- You should have a ruler, compass and protractor where required.

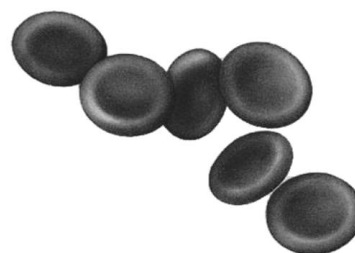
Total Marks :

- 1) Work out The value of $(0.4)^2 \times 1000$. Give your answer in standard form

Answer [2]

- 2) The table shows the acceptable amount **per litre** of some cells and substances found in the male human blood.

Type of cell or substance	Acceptable amount per litre
White Blood Cells	3.8×10^9
Red Blood Cells	4.2×10^{12}
Platelets	150×10^9
Grams of Creatinine	5×10^{-3}
Grams of Haemoglobin	120



- a) Express the number of **white blood cells** in ordinary form.

Answer[2]

- b) Is the number of **platelets** in standard form? Explain.

[2]

3) (a) Express 0.005×192.15 in standard form.

Answer [2]

(b) Express $\frac{7.2 \times 10^{-5}}{2.0 \times 10^{-7}}$ in ordinary form.

Answer [2]

4) (a) The diameter of an atom is 0. 000 000 000 25 cm. Write this in **standard form**.

Answercm [2]

(b) The speed of light is 3.0×10^5 kilometres per second.

(i) Write this number in **ordinary form**.

AnswerKm [2]

- (ii) The distance of the Earth from the Sun is 148 800 000 km. Work out the **time** taken for light from the Sun to reach the earth. Give your answer correct to the **nearest minute**.

Answerminutes [2]

- 5) These four numbers are written in **standard form**.

$$7.6 \times 10^3 \quad 1.57 \times 10^6 \quad 9.8 \times 10^{-3} \quad 4.9 \times 10^{-2}$$

- (i) Write down the **largest** number

Answer [1]

- (ii) Write down the **smallest** number

Answer [1]

- (iii) Write 4.9×10^{-2} as an **ordinary number**.

Answer [1]

- (iv) **Multiply** 7.6×10^3 by 1.57×10^6 . Give your answer in **standard form**.

Answer [2]

- 6) The population in Italy was 5.04×10^7 . Over the last few years, the population increased by 2×10^6 .

Calculate the new population and write your answer in standard form

Answer [3]

- 7) Einstein's famous formula states that $E = mc^2$. Work out the value of E given that $m = 1.5 \times 10^{-3}$ and $c = 2.5 \times 10^7$. Write your answer in standard form.

Answer [3]

- 8) 1 **gram** of lead occupies a volume of $9 \times 10^{-8} \text{m}^3$. What is the volume of lead occupied by 9×10^5 **grams** of lead? Give your answer in standard form

Answer m^3 [3]

9) Work out the following giving your answer in standard form:

(i) $(0.226 \times 10^5) \div (5 \times 10^{-3})$

Answer [2]

(ii) $0.226 \times 10^3 + 50 \times 10^{-2}$

Answer [2]

10) The mass of Earth is 5.97×10^{24} kg and the mass of Neptune is 1.02×10^{26} kg.

a) What is the difference between their masses? Give your answer in standard form.

Answer [2]

b) How many times, is the mass of Neptune greater than the mass of Earth?

Answer [2]

11) Light takes **8.283 minutes** to travel from the surface of the Sun to the Earth.

a) Write this time in **hours**, giving your answer in **standard form**.

Answerhours [2]

The speed of light is **1.08×10^9 km/h**.

b) Fill in the blanks, giving your answer in **standard form**:

The distance between the Sun and the Earth is approximately _____ km. [2]

12) In 2014, the tribe population of Brazil was 8.17×10^5 . To calculate the population in 2015, this figure is multiplied by **0.96**.

- a) What is the calculated population in 2015?
Give your answer **in standard form**, correct to 2 decimal places.

Answerpeople [2]

- b) What is the calculated percentage decrease in population between 2014 and 2015?

Answer% [2]

c) If the population continued to decrease at the same rate each year, what was the calculated population in 2017? Give your **answer in standard form**, correct to 2 decimal places.

Answerpeople [2]

- 13) The table shows the flying distances from a Dubai airport to other airports and vice versa.

Destination Airport	Distance (metres)
Malta	4,100,000
Sydney	12,000,000
Beijing	5.8×10^6
Kuwait	8.6×10^5

- a) Write the distance from Dubai to Malta in standard form.

Answermetres [2]

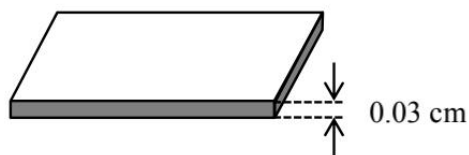
- b) Which location is shorter from Dubai : Beijing or Kuwait? Give a reason to support your answer.

[2]

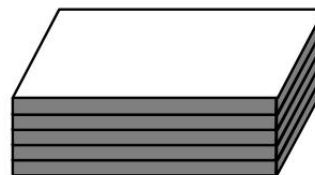
- c) An aeroplane flies from Malta to Dubai and then from Dubai to Beijing. What is the total distance travelled. Give your answer in standard form.

Answermetres [2]

14)



A card



A packet of 5 cards

- a) i) A card is 0.03 cm thick. Express 0.03 cm in **standard form**.

Answercm [2]

- ii) Similar cards are grouped into packets of 5.
What is the thickness, in **standard form**, of one **packet** of cards?

Answercm [2]

- b) i) **One** card has a mass of 1.5×10^{-3} kg. Express this number as an **ordinary number**.

Answerkg [2]

- ii) Packets of **5** cards are packed into boxes, each box containing **8** packets.
What is the mass of the cards in **20** boxes?

Answerkg [2]

15)

The following table gives the amount of rice produced by some countries in a particular year.

Country	Rice Produced in tonnes
China	1.47×10^5
India	1.35×10^5
Japan	7.62×10^3
Pakistan	7.20×10^4
Taiwan	1.22×10^3
Thailand	1.86×10^4

(a) Which of the above countries produced:

(i) the largest amount of rice? _____

(ii) the smallest amount of rice? _____

(2)

(b) 1 tonne = 1000 kg.

How many kilograms of rice were produced in Thailand?

Write your answer in standard form.

(2)

(c) Which countries produced more than 100 times the amount of rice produced in Taiwan?

(2)

(Total: 6 marks)

- 16) The table shows the amount of wheat produced last year in the top ten wheat producing countries.

Country	Wheat produced in metric tonnes in 2021
Australia	3.30×10^7
Canada	3.52×10^7
China	1.34×10^8
France	3.05×10^7
Germany	2.21×10^7
India	1.08×10^8
Pakistan	2.52×10^7
Russia	8.54×10^7
Ukraine	2.55×10^7
USA	4.97×10^7

- (a) Which country produced the largest amount of wheat? (1)
- (b) Which country produced the second largest amount of wheat? (1)
- (c) Which of these ten countries produced the smallest amount of wheat? (1)
- (d) Write the following as ordinary numbers in words: (1)
- (i) 3.30×10^7 (1)
- (ii) 1.08×10^8 (1)
- (e) How much more wheat did Ukraine produce than Pakistan?
Give your answer in standard form. (2)

(Total: 7 marks)

17) The table below gives the population of the world by region in the year 2010 and in 2016.

Region	Population in 2010	Population in 2016
Africa	8.14×10^8	1.23×10^9
America	8.41×10^8	9.98×10^8
Antarctica	1.20×10^3	1.11×10^3
Asia	3.71×10^9	4.46×10^9
Europe	7.35×10^8	7.41×10^8
Oceania	3.11×10^7	4.01×10^7

- (a) Which region had the highest population in the year 2010? (1)
- (b) Which regions showed an increase in population from 2010 to 2016? (2)
- (c) Work out the percentage change in the population of Africa from 2010 to 2016. (2)
- (d) The six regions in the table cover the whole world. Work out the world population in 2016. Give your answer in standard form. (2)

(2)

(Total: 7 marks)