

N105 Standard form

Q1.

(a) Write 0.000 423 in standard form.

.....
(1)

(b) Write 4.5×10^4 as an ordinary number.

.....
(1)

(Total for question is 2 marks)

Q2.

(a) Write 0.00562 in standard form.

.....
(1)

(b) Write 1.452×10^3 as an ordinary number.

.....
(1)

(Total for question = 2 marks)

Q3.

(a) Write 32 460 000 in standard form.

.....
(1)

(b) Write 4.96×10^{-3} as an ordinary number.

.....
(1)

Asma was asked to compare the following two numbers.

$$A = 6.212 \times 10^8 \quad \text{and} \quad B = 4.73 \times 10^9$$

She says,

"6.212 is bigger than 4.73 so A is bigger than B ."

(c) Is Asma correct?

You must give a reason for your answer.

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

(1)

(Total for question = 3 marks)

Q4.

A metal box has a weight of 8×10^3 grams.

Find, in standard form, the weight of 10 of these metal boxes.

..... grams

(Total for question = 1 mark)

Q5.

Work out the value of $(9 \times 10^{-4}) \times (3 \times 10^7)$ Give your answer in standard form.

.....

(Total for question = 2 marks)

Q6.

(a) Write 2.673×10^4 as an ordinary number.

.....

(1)

(b) Write 0.0704 in standard form.

.....

(1)

(c) Calculate $(4.515 \times 10^6) \div (3.01 \times 10^{-2})$
Give your answer in standard form.

.....

(2)

(Total for question = 4 marks)

Q7.

Work out $(13.8 \times 10^7) \times (5.4 \times 10^{-12})$
Give your answer as an ordinary number.

.....
(Total for question = 2 marks)

Q8.

Work out $\frac{0.06 \times 0.0003}{0.01}$
Give your answer in standard form.

.....
(Total for question = 3 marks)

Q9.

Work out $(3.42 \times 10^{-7}) \div (7.5 \times 10^{-6})$
Give your answer in standard form.

.....
(Total for question = 2 marks)

Q10.

(a) Write 340 000 000 in standard form.

.....
(1)

(b) Work out $(1.67 \times 10^{-7}) \div (9.11 \times 10^{-3})$

Give your answer as an ordinary number correct to 3 significant figures.

.....
(2)

(Total for question = 3 marks)

Q11.

(a) Write 4.7×10^{-1} as an ordinary number.

.....
(1)

(b) Work out the value of $(2.4 \times 10^3) \times (9.5 \times 10^5)$
Give your answer in standard form.

.....
(2)

(Total for question = 3 marks)

Q12.

Work out the value of $\frac{2.645 \times 10^9}{1.15 \times 10^3}$
Give your answer in standard form.

.....
(Total for question = 2 marks)

Q13.

(a) Write the number 0.000 075 47 in standard form.

.....
(1)

(b) Write 3.42×10^4 as an ordinary number.

.....
(1)

(c) Work out $\frac{2.3 \times 10^4 \times 6.7 \times 10^3}{5 \times 10^{-8}}$

.....
(2)

(Total for question = 4 marks)

Q14.

The distance from the Earth to the Sun is 1.496×10^{11} metres.
The speed of light is 3×10^8 metres per second.

(a) Show that, correct to 3 significant figures, light will take 0.139 hours to travel from the Sun to the Earth.

(3)

1 googol is 1×10^{100}

Danesh says,

" When I multiply 1.496×10^{11} by 6.68×10^9 I get nearly 1 googol because $1.496 \times 10^{11} \times 6.68 \times 10^9 = 9.99 \times 10^{99}$ "

(b) Is Danesh correct?

Give a reason for your answer.

.....
.....

(1)

(Total for question = 4 marks)

Q15.

One uranium atom has a mass of 3.95×10^{-22} grams.

(a) Work out an estimate for the number of uranium atoms in 1kg of uranium.

.....

(3)

(b) Is your answer to (a) an underestimate or an overestimate?
Give a reason for your answer.

.....
.....

(1)

(Total for question = 4 marks)

Q16.

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

0.045×10^3 4.5×10^{-3} 450 0.45×10^{-1}

.....

(Total for question = 2 marks)

Q17.

(a) Write 7.97×10^{-6} as an ordinary number.

.....
(1)

(b) Work out the value of $(2.52 \times 10^5) \div (4 \times 10^{-3})$
Give your answer in standard form.

.....
(2)

(Total for question = 3 marks)

Q18.

(a) Write 0.00549 in standard form.

.....
(1)

(b) Find the value of $(8 \times 10^3)^2$
Give your answer in standard form.

.....
(2)

(c) Find the value of $(7.6 \times 10^5) + (8.7 \times 10^4)$
Give your answer in standard form.

.....
(2)

(Total for question = 5 marks)