Summer 2019 Paper 2 Q8

1 (a) Write 0.00562 in standard form.

.....

(1)

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

.....

(1)

(Total for Question 1 is 2 marks)

Autumn 2017 Paper 3 Q7

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

.....

(Total for Question 2 is 2 marks)

Summer 2017 Paper 1 Q8

3 (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 is 3 marks)

Summer 2017 Paper 2 Q10

4 The table shows some information about eight planets.

Planet	Distance from Earth (km)	Mass (kg)
Earth	0	5.97×10^{24}
Jupiter	6.29×10^{8}	1.898×10^{27}
Mars	7.83×10^{7}	6.42×10^{23}
Mercury	9.17×10^{7}	3.302×10^{23}
Neptune	4.35×10^{9}	1.024×10^{26}
Saturn	1.28×10^{9}	5.68×10^{26}
Uranus	2.72×10^{9}	8.683×10^{25}
Venus	4.14×10^{7}	4.869×10^{24}

(a) Write down the name of the planet with the greatest mass.

.....

(1)

(b) Find the difference between the mass of Venus and the mass of Mercury.

..... kg

(1)

Nishat says that Neptune is over a hundred times further away from Earth than Venus is.

(c) Is Nishat right?
You must show how you get your answer.

(2)

(Total for Question 4 is 4 marks)

Summer 2018 Paper 3 Q9

5 $T = \sqrt{\frac{w}{d^3}}$

$w = 5.6 \times 10^{-5}$
$d = 1.4 \times 10^{-4}$

(a) Work out the value of T.
Give your answer in standard form correct to 3 significant figures.

$T =$ .....

(2)

w is increased by 10%
d is increased by 5%

Lottie says,

"The value of T will increase because both w and d are increased."

(b) Lottie is wrong.
Explain why.

.....

.....

(2)

(Total for Question 5 is 4 marks)

Summer 2019 Paper 3 Q11

6 In May 2019, the distance between Earth and Mars was 3.9×10^7 km.

In May 2019, a signal was sent from Earth to Mars.
Assuming that the signal sent from Earth to Mars travelled at a speed of 3×10^5 km per second,

(a) how long did the signal take to get to Mars?

..... seconds

(2)

The speed of the signal sent from Earth to Mars in May 2019 was actually less than 3×10^5 km per second.

(b) How will this affect your answer to part (a)?

.....

.....

.....

(1)

(Total for Question 6 is 3 marks)

Summer 2020 Paper 1 Q9

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

6.72×10^5 67.2×10^{-4} 672×10^4 $0.000\,672$

.....

(Total for Question 7 is 2 marks)

Summer 2021 Paper 3 Q3

8 (a) Write 4.5×10^5 as an ordinary number.

.....

(1)

(b) Write 0.007 in standard form.

.....

(1)

(c) Work out $4.2 \times 10^3 + 5.3 \times 10^2$
Give your answer in standard form.

.....

(2)

(Total for Question 8 is 4 marks)

Autumn 2018 Paper 2 Q7

9 (a) Write the number $0.000\,086\,23$ in standard form.

.....

(1)

(b) Work out $\dfrac{3.2 \times 10^{3} + 5.1 \times 10^{-2}}{4.3 \times 10^{-4}}$

Give your answer in standard form, correct to 3 significant figures.

.....

(2)

(Total for Question 9 is 3 marks)

Autumn 2019 Paper 2 Q7

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

.....

(Total for Question 10 is 2 marks)

Autumn 2019 Paper 3 Q7

11 (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 11 is 3 marks)

Autumn 2022 Paper 3 Q9

12 (a) Write 6.75×10^{-4} as an ordinary number.

.....

(1)

(b) Work out $\dfrac{2.56 \times 10^{6} \times 4.12 \times 10^{-3}}{1.6 \times 10^{-2}}$

Give your answer in standard form.

.....

(2)

(Total for Question 12 is 3 marks)

Summer 2022 Paper 1 Q4

13 (a) Write 1.63×10^{-3} as an ordinary number.

.....

(1)

(b) Write $438\,000$ in standard form.

.....

(1)

(c) Work out $(4 \times 10^{3}) \times (6 \times 10^{-5})$
Give your answer in standard form.

.....

(2)

(Total for Question 13 is 4 marks)