

Standard Form Exam Questions

Q1.

(a) Write 7.9×10^{-4} as an ordinary number.

.....
(1)

(b) Work out $(6.5 \times 10^5) \times (3.1 \times 10^4)$
Give your answer in standard form.

.....
(2)

(Total for question = 3 marks)

Q2.

The number of people living in Tokyo is 3.57×10^7

(a) Write 3.57×10^7 as an ordinary number.

.....
(1)

The land area of Tokyo is 1.35×10^4 square kilometres.

(b) Work out the mean number of people per square kilometre living in Tokyo.
Give your answer in standard form, correct to 2 significant figures.

.....
(2)

(Total for question = 3 marks)

Q3.

(a) Write 0.000076 in standard form.

.....
(1)

The area covered by the Pacific Ocean is $1.6 \times 10^8 \text{ km}^2$
The area covered by the Arctic Ocean is $1.4 \times 10^7 \text{ km}^2$

(b) Write 1.6×10^8 as an ordinary number.

.....
(1)

The area covered by the Pacific Ocean is k times the area covered by the Arctic Ocean.

(c) Find, correct to the nearest integer, the value of k .

$k =$
(2)

(Total for question = 4 marks)

Q4.

(a) Write 1.2×10^{-5} as an ordinary number.

.....
(1)

(b) Work out $7.9 \times 10^5 + 6 \times 10^4$
Give your answer in standard form.

.....
(2)

(Total for Question is 3 marks)

Q5.



The mass of the Space Shuttle is 7.8×10^4 kilograms.

(a) Write 7.8×10^4 as an ordinary number.

.....
(1)

The Space Shuttle docks with the International Space Station.

The mass of the International Space Station is 4.62×10^5 kilograms.

(b) Calculate the total mass of the Space Shuttle and the International Space Station.
Give your answer in standard form.

.....kg
(2)

(Total for question = 3 marks)

Mark Scheme

Q1.

Question	Working	Answer	Mark	Notes
a		0.00079	1	B1 cao
b		2.015×10^{10}	2	M1 for 20.15×10^9 or 2015000000 or 2.015×10^n where $n \neq 10$ A1 For 2×10^{10} or better
Total 3 marks				

Q2.

Question	Working	Answer	Mark	Notes
(a)		35 700 000	1	B1
(b)	$(3.57 \times 10^7) + (1.35 \times 10^6) (= 2644(44\dots))$ or $35\,700\,000 + 13\,500\,000$	2.6×10^8	2	M1 or for 2600 – 2644.4 A1 must be in standard form and in the range $2.6 \times 10^8 - 2.64 \times 10^8$

Q3.

Q	Working	Answer	Mark	Notes
(a)		7.6×10^{-5}	1	B1
(b)		160 000 000	1	B1
(c)	$\frac{1.6 \times 10^8}{1.4 \times 10^7}$ or $\frac{16}{1.4}$ or $\frac{80}{7}$ or $\frac{160000000}{14000000}$ or 11.428...		2	M1
		11		A1 cao
				Total 4 marks

Q4.

Question	Working	Answer	Mark	Notes
(a)		0.000012	1	B1
(b)	$790000 + 60000$ or $79 \times 10^4 + 6 \times 10^4$ or $7.9 \times 10^5 + 0.6 \times 10^5$			M1 or sight of digits 85
		8.5×10^5	2	A1
				Total 3 marks

Q5.

Question Number	Working	Answer	Mark	Notes
(a)		78000	1	B1
(b)	$(4.62 \times 10^5) + (7.8 \times 10^4)$			M1 Intention to add correct values or digits 54
		5.4×10^5	2	A1 Answer must be in standard form
				Total 3 marks