Standard Form Review

Question 1

Write 250 000 in standard form.

....

(1 mark)

Question 2

What is 0.009 in standard form?

....

Question 3

Write 7900 in standard form.

....

(2 marks)

Question 4

Write 0.0000712 in standard form.

....

Question 5

Write 3.5 million in standard form.

....

Question 6

Write

$$8.2 \times 10^5$$

as an ordinary number.

....

(1 mark)

Question 7

Write 7.1×10^{-5} as an ordinary number.

....

Question 8

Write 7.24×10^{6} as an ordinary number.

....

Question 9

Write 3.24×10^{-6} as an ordinary number.

....

Question 10

The table shows the surface areas, in km^2, of five oceans.

Ocean	Surface area (km^2)
Atlantic	7.68×10^7
Indian	6.86×10^7
Pacific	1.56×10^8
Southern	2.03×10^7
Arctic	1.41×10^7

Which of these oceans has the largest surface area?

....

(1 mark)

Question 11

The table shows the diameters, in kilometres, of five planets.

Planet	Diameter (km)
Venus	1.2×10^4
Jupiter	1.4×10^5
Neptune	5.0×10^4
Mars	6.8×10^3
Saturn	1.2×10^5

Which of these planets has the smallest diameter?

....

(1 mark)

Question 12

Place the following in **ascending** order:

$$2 \times 10$$

$$2 \times 10^9$$

$$2 \times 10^4$$

200

....

Question 13

Here are three numbers written in standard form.
Arrange these numbers in order of size.
Start with the smallest number.

$$5.6 \times 10^{-7}$$

$$8.6 \times 10^{-9}$$

$$5.64 \times 10^{-8}$$

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....

(2 marks)

Question 14

Place the following in **ascending** order:

$$8.9 \times 10^2$$

$$8 \times 10^{-1}$$

$$8 \times 10^4$$

8

....

Question 15

Work out $(3 \times 10^6) \times (2 \times 10^5)$.

Give your answer in standard form.

....

Question 16

Work out $(5 \times 10^{15}) \div (2 \times 10^9)$.

Give your answer in standard form.

....

Question 17

Work out, giving your answer in standard form.

$$(6.8 \times 10^4) \div (2 \times 10^{-3})$$

....

(2 marks)

Question 18

A spaceship travelled for 6×10^2 hours at a speed of 8×10^4 km/h.

Calculate the distance travelled by the spaceship.
Give your answer in standard form.

....

(3 marks)

Question 19

Work out $(8 \times 10^{-11}) \div (2 \times 10^{-5})$.

Give your answer in standard form.

....

Question 20

In order to work out

$$(7 \times 10^2) + (2 \times 10^4)$$

which method/answer would be correct?

[   ] 0.07+0.0002

[   ] $700 + 20000$

[   ] 9×10^6

[   ] 14×10^6

Question 21

Evaluate the following. Give your answer in standard form.

$$(8 \times 10^4) - (4 \times 10^2)$$

....

Question 22

Work out the value of

$$(6 \times 10^8) + (4 \times 10^7)$$

Give your answer in standard form.

....

(2 marks)

Question 23

Work out $7.8 \times 10^6 - 5.2 \times 10^5$.

Give your answer in standard form.

....

Question 24

Work out

$$4.5 \times 10^2 + 7.3 \times 10^3$$

....

(2 marks)

Question 25

You are given

$$8 \times 10^a \times 4 \times 10^4 = 3.2 \times 10^{12}$$

Work out the value of a.

....

Question 26

What is 42 metres in kilometres? Give your answer in standard form.

....

Question 27

Look at the number.

$$8.679 \times 10^4$$

Round it to the nearest thousand.
Give your answer in **standard form**.

....

Question 28

$$\frac{1}{2500} \text{ is equal to } \mathbf{0.0004}$$

Write $\frac{1}{25000}$ in standard form.

....

Question 29

Work out:

$\frac{(1.2 \times 10^6) \times (5 \times 10^7)}{(6 \times 10^5) \times (2 \times 10^{-2})}$.

Give your answer in standard form

....

Question 30

Work out

$$\frac{0.06 \times 0.0003}{0.01}$$

Give your answer in standard form.

....

(3 marks)

Answers

Question 1

$$2.5 \times 10^5$$

| 2.5×10^5 | 1 | B1 cao |

Question 2

$$9 \times 10^{-3}$$

Question 3

$$7.9 \times 10^3$$

| 7.9×10^3 | 2 | B1 cao |

Question 4

$$7.12 \times 10^{-5}$$

Question 5

$$3.5 \times 10^6$$

Question 6

820000

| 820 000 | 1 | B1 cao |

Question 7

0.000071

Question 8

7240000

Question 9

0.00000324

Question 10

"Pacific"

| Pacific | 1 | B1 |

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Question 11

"Mars"

Mars | 1 | B1   Accept 6.8 x 10^3 oe

Question 12

2×10 , 200 , 2×10^4 , 2×10^9

Question 13

8.6×10^{-9} , 5.64×10^{-8} , 5.6×10^{-7}

8.6 x 10^{-9} 5.64 x 10^{-8} 5.6 x 10^{-7} | 2 | B2
B1 for smallest or largest in correct position

Question 14

8×10^{-1} , 8 , 8.9×10^2 , 8×10^4

Question 15

$$6 \times 10^{11}$$

Question 16

$$2.5 \times 10^6$$

Question 17

$$3.4 \times 10^7$$

3.4 × 10^7 | | 2 | **B1** for 3.4 × 10^n oe or 34 000 000
or
SC1 for k × 10^7

Question 18

$$4.8 \times 10^7$$

$6 \times 10^2 \times 8 \times 10^4$
48×10^6 | 4.8 × 10^7 | 3 | M1 for $6 \times 10^a \times 8 \times 10^b$ oe, a and b integers including 0
A1 for 48 × 10^6 oe
A1 cao

Question 19

$$4 \times 10^{-6}$$

Question 20

$700 + 20000$

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Question 21

$$7.96 \times 10^4$$

Question 22

$$6.4 \times 10^8$$

$(6 \times 10^8) + (4 \times 10^7)$ $= 6 \times 10^8 + 0.4 \times 10^8$	6.4×10^8	2	M1	$6 \times 10^8 + 0.4 \times 10^8$ or $60 \times 10^7 + 4 \times 10^7$ or 600 000 000 + 40 000 000 or 640 000 000 oe or 6.4×10^n
			A1	cao

Question 23

$$7.28 \times 10^6$$

Question 24

$$7.75 \times 10^3$$

450 + 7300		M1	or $0.45 \times 10^3 + 7.3 \times 10^3$ or $4.5 \times 10^2 + 73 \times 10^2$
$= 7750 = 7.75 \times 10^3$		A1	or complete working leading to 7.75×10^3

Question 25

$$a = 7$$

Question 26

$$4.2 \times 10^{-2}$$

Question 27

$$8.7 \times 10^4$$

2m	8.7×10^4
or 1m	Shows the value 86 790, not expressed in any kind of index form
	or
	Shows the digits 87

Question 28

$$4 \times 10^{-5}$$

1m	4×10^{-5}

Question 29

$$5 \times 10^9$$

Question 30

$$1.8 \times 10^{-3}$$

1.8×10^{-3}	M2	for $\frac{6 \times 10^{-2} \times 3 \times 10^{-4}}{1 \times 10^{-2}}$ or 18×10^{-4} or 0.0018 as the answer
	(M1	for 6×0.0003 **or** 0.06×0.03 **or** 1.8×10^n ($n \neq -3$) **or** $0.000018 \div 0.01$ **or** rewriting one number in standard form)
	A1	cao