

## Non-Calculator

Q1.

- (a) Write in standard form 12 500

Answer \_\_\_\_\_

(1)

- (b) Write as an ordinary number  $3.4 \times 10^{-2}$

Answer \_\_\_\_\_

(1)

(Total 2 marks)

Q2.

- (a) Work out  $2.4 \times 0.002$

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Answer \_\_\_\_\_

(1)

- (b) Write  $1.2 \times 10^{-5}$  as an ordinary number.

\_\_\_\_\_

Answer \_\_\_\_\_

(1)

- (c) Write 2 500 000 in standard form.

\_\_\_\_\_

Answer \_\_\_\_\_

(1)

(Total 3 marks)

Q3.

(a) Circle the answer to  $9.6 \times 108 \div 4$

$9.6 \times 102$        $2.4 \times 102$        $2.4 \times 108$        $9.6 \times 104$

(1)

(b) Work out  $(4 \times 10^{-3}) \times (9 \times 10^{14})$

Give your answer in standard form.

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Answer \_\_\_\_\_

(2)

(Total 3 marks)

Q4.

(a) Write down the value of  $10^0$

Answer \_\_\_\_\_

(1)

(b) Write  $5^{-3}$  in standard form.

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Answer \_\_\_\_\_

(3)

(Total 4 marks)

Q5.

- (a) Write 0.000 583 in standard form.

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Answer -----

(1)

- (b) Write  $9.416 \times 10^5$  as an ordinary number.

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Answer -----

(1)

- (c) Divide 7200 million by 300  
Give your answer in standard form.

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Answer -----

(3)

(Total 5 marks)

Q6.

- (a) Work out  $3 \times 10^5 \times 6 \times 10^{-2}$

Write your answer in standard form.

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Answer -----

(2)

- (b) Work out  $(8 \times 10^4 + 4 \times 10^4) \div 24$

Write your answer in standard form.

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Answer -----

(2)

(Total 4 marks)

Q7.

Which of these is not a square number?

Circle your answer.

$4 \times 102$

$4 \times 106$

$9 \times 103$

$9 \times 104$

(Total 1 mark)

Q8.

Write the number six million five thousand two hundred in standard form.

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Answer \_\_\_\_\_

(Total 2 marks)

Q9.

Which of these has the greatest value?

Circle your answer.

$6.15 \times 104$

$61\,499$

$6.2 \times 103$

$61.6 \times 103$

(Total 1 mark)

### Calculator

Q10.

Write these numbers in descending order.

$9563$

$9.56 \times 103$

$9.56 \times 310$

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Answer \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

(Total 2 marks)

Q11.

- (a) The product of  $a \times 10^b$  and  $3.8 \times 10^6$  is  $2.318 \times 10^3$

Work out the values of  $a$  and  $b$ .

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$a = \dots\dots\dots$

$b = \dots\dots\dots$

(3)

- (b) Write down a number in standard form that is more than 20 million and less than 30 million.

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Answer \_\_\_\_\_

(2)

(Total 5 marks)

Q12.

- (a) Write these numbers in ascending order.

9812

$9.82 \times 10^2$

$9.81 \times 10^3$

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Answer \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

(1)

(b) Jon is multiplying two numbers given in standard form.

$$\begin{aligned} 2 \times 10^6 \times 3 \times 10^7 &= (2 \times 3) \times 10^{(6+7)} \\ &= 6 \times 10^{13} \end{aligned}$$

He says,

“So, for any numbers

$$a \times 10^b \times c \times 10^d = (a \times c) \times 10^{(b+d)}$$

which will always be in standard form.”

Is he correct that  $(a \times c) \times 10^{(b+d)}$  will always be in standard form?

Tick a box.

Correct

Not correct

Show working to support your answer.

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(2)  
(Total 3 marks)

Q13.

Work out  $(5.85 \times 10^6) \div (1.3 \times 10^2)$

Give your answer in standard form.

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Answer \_\_\_\_\_

(Total 2 marks)

Q14.

Circle the number written in standard form.

$0.5 \times 10^4$

$5 \times 10^{-4}$

$50 \times 10^4$

$5 \times 10^{0.4}$

(Total 1 mark)

Q15.

A teacher asks Amy and Jack to convert 101 376 into standard form.

(a) Amy writes  $10.1376 \times 10^4$  Criticise Amy's answer.

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(1)

(b) Jack writes  $1.01376 \times 10^{-5}$  Criticise Jack's answer.

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(1)

(Total 2 marks)

Q16.

Which number is not in standard form?  
Circle your answer.

$1.01 \times 10^9$

$0.99 \times 10^{-2}$

$9.8 \times 10^6$

$4.632 \times 10^{-5}$

(Total 1 mark)

Q17.

The table shows the populations of some countries.

Country	Population
Denmark	5.59 ×
France	106 6.35
Greece	× 107
Malta	1.14 ×
Netherlands	107 4.19
Russia	× 105
Spain	1.68 ×

- (a) Which of these countries has the lowest population?

Answer  $\frac{107}{1.43} \times 108$   
 $4.68 \times$

(1)

- (b) Which of these countries has a population approximately three times that of Denmark?

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Answer \_\_\_\_\_

(2)

(Total 3 marks)