

## 1MA1 Foundation themed papers: Standard form

Write your name here			
Surname	Other names		
Centre Number		Candidate Number	
Pearson Edexcel Level 1/Level 2 GCSE (9–1)			
<b>Mathematics</b> <b>Standard form</b>			
			Paper Reference <b>1MA1</b>
<b>You must have:</b> Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser, calculator. Tracing paper may be used.			Total Marks

### Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided – *there may be more space than you need.*
- You must **show all your working.**
- Diagrams are **NOT** accurately drawn, unless otherwise indicated.
- If your calculator does not have a  $\pi$  button, take the value of  $\pi$  to be 3.142 unless the question instructs otherwise.

### Information

- The total mark for this paper is **36**. There are **12** questions.
- Questions have been arranged in an ascending order of mean difficulty, as found by all students in the June 2017–November 2019 examinations.
- The marks for **each** question are shown in brackets – *use this as a guide as to how much time to spend on each question.*

### Advice

- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end.

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- 1 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 1 is 2 marks)**

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- 2 (a) Write  $4.7 \times 10^{-1}$  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 2 is 3 marks)**

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

.....  
**(Total for Question 3 is 2 marks)**

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

.....  
**(Total for Question 4 is 2 marks)**

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- 5 (a) Write 0.00562 in standard form.

.....  
**(1)**

- (b) Write  $1.452 \times 10^3$  as an ordinary number.

.....  
**(1)**

**(Total for Question 5 is 2 marks)**

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

.....  
(1)

(b) Write  $3.42 \times 10^4$  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 6 is 4 marks)**

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**7** (a) Write  $2.673 \times 10^4$  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 7 is 4 marks)**

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**8** (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 8 is 3 marks)**

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**9** (a) Write 32 460 000 in standard form.

.....  
(1)

(b) Write  $4.96 \times 10^{-3}$  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 9 is 3 marks)**

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**10** Work out  $\frac{0.06 \times 0.0003}{0.01}$

Give your answer in standard form.

.....  
**(Total for Question 10 is 3 marks)**

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**11** The distance from the Earth to the Sun is  $1.496 \times 10^{11}$  metres.  
The speed of light is  $3 \times 10^8$  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  $1 \times 10^{100}$

Danesh says,

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

Is Danesh correct?

(b) Give a reason for your answer.

.....  
.....  
**(1)**

**(Total for Question 11 is 4 marks)**

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**1MA1 Foundation themed papers: Standard form**

**12** (a) Write  $1.04 \times 10^5$  as an ordinary number.

.....  
(1)

(b) Write 0.06 in standard form.

.....  
(1)

$4.62 \times 10^8$  tins of beans were sold last year.  
These tins of beans cost a total of £300.3 million.

(c) Work out the average cost per tin of beans.

£.....  
(2)

**(Total for Question 12 is 4 marks)**

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**TOTAL MARKS FOR PAPER: 36**