

## 1MA1 Higher themed papers: Change the subject

Write your name here			
Surname	Other names		
Centre Number		Candidate Number	
Pearson Edexcel Level 1/Level 2 GCSE (9–1)			
<b>Mathematics</b>			
<b>Change the subject</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 **25**. There are **9** 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** Make  $v$  the subject of the formula  $w = \frac{15(t - 2v)}{v}$

.....  
**(3)**  
**(Total for Question 1 is 3 marks)**

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**2** Make  $m$  the subject of the formula  $f = \frac{3m + 4}{m - 1}$

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

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**3** Make  $s$  the subject of  $v^2 = u^2 + 2as$

.....  
(2)

**(Total for Question 3 is 4 marks)**

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**4**  $T = \frac{q}{2} + 5$

Here is Spencer's method to make  $q$  the subject of the formula.

$$2 \times T = q + 5$$

$$q = 2T - 5$$

What mistake did Spencer make in the first line of his method?

.....  
.....  
.....

**(Total for Question 4 is 1 mark)**

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5 Make  $k$  the subject of the formula  $y = \sqrt{2m - k}$

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

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6 Make  $t$  the subject of  $p = \sqrt{a + \frac{t}{2}}$

.....  
(Total for Question 6 is 3 marks)

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**7**

$$u = \frac{3t}{4} + 2$$

Make  $t$  the subject of the formula.

.....  
**(3)**

**(Total for Question 7 is 7 marks)**

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**8**

Make  $t$  the subject of the formula  $k = \frac{2(t+3)}{t-3}$

.....  
**(Total for Question 8 is 4 marks)**

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**9** Make  $m$  the subject of

$$f = \frac{4-3m}{5+m}$$

.....  
**(Total for Question 9 is 4 marks)**

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**TOTAL MARKS FOR PAPER: 25**