

## 1MA1 Higher themed papers: Inequalities

Write your name here	
Surname	Other names
Centre Number	Candidate Number
<input type="text"/>	<input type="text"/>
Pearson Edexcel Level 1/Level 2 GCSE (9–1)	
<b>Mathematics</b> <b>Inequalities</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 **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

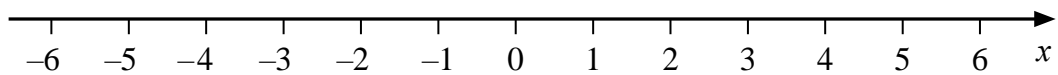
- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end.

**1MA1 Higher themed papers: Inequalities**

**1** (a) Solve  $14n > 11n + 6$

.....  
(2)

(b) On the number line below, show the set of values of  $x$  for which  $-2 < x + 3 \leq 4$



(3)

**(Total for Question 1 is 5 marks)**

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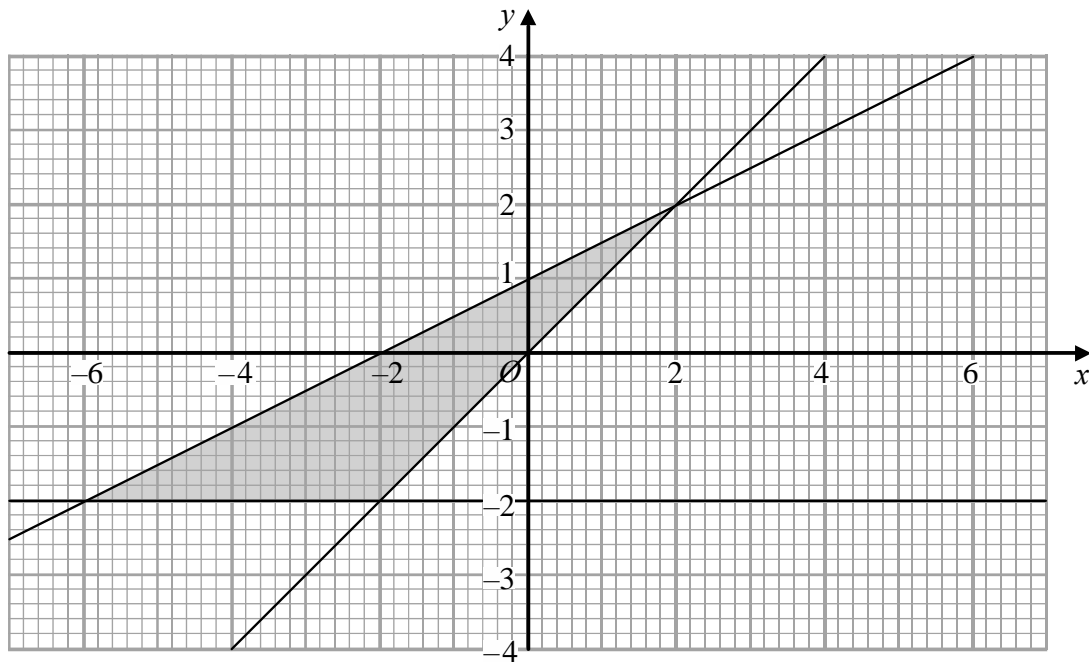
**2** A number,  $n$ , is rounded to 2 decimal places.  
The result is 4.76.  
Using inequalities, write down the error interval for  $n$ .

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

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3



Write down the three inequalities that define the shaded region.

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

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

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**4** Solve  $2x^2 + 3x - 2 > 0$

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

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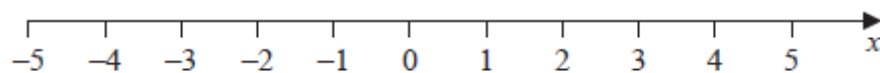
**5** Solve  $2x^2 - 5x - 12 > 0$

.....  
**(Total for Question 5 is 3 marks)**

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### 1MA1 Higher themed papers: Inequalities

- 6 Solve the inequality  $2x^2 + x - 3 < 0$   
Represent the solution set on the number line.



**(Total for Question 6 is 4 marks)**

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**7**

$n$  is an integer such that  $3n + 2 \leq 14$  and  $\frac{6n}{n^2 + 5} > 1$

Find all the possible values of  $n$ .

.....  
**(Total for Question 7 is 5 marks)**

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**8** Solve  $22 < \frac{m^2 + 7}{4} < 32$

Show all your working.

.....  
**(Total for Question 8 is 5 marks)**

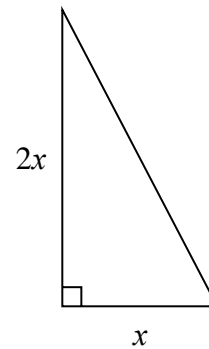
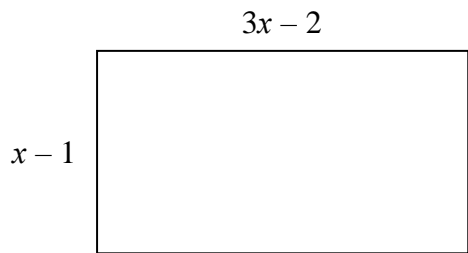
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**9** Here is a rectangle and a right-angled triangle.



All measurements are in centimetres.

The area of the rectangle is greater than the area of the triangle.

Find the set of possible values of  $x$ .

.....  
**(Total for Question 9 is 5 marks)**

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**TOTAL MARKS FOR PAPER: 36**