

1

Look at these numbers written in Roman numerals.

MCMVII      MMCD      MDCCXLIII      MMDX

Circle the **largest** number.

What is the value of the **smallest** number?

2 marks

2

The numbers in this sequence increase by 3 each time.

3      6      9      12      ...

The numbers in this sequence increase by 5 each time.

5      10      15      20      ...

Both sequences continue.

Write a number **greater than 100** which will be in **both** sequences.

Show your method	
------------------------	--

2 marks

3

Estimate the answer to this calculation

$$349.05 + 907.53$$

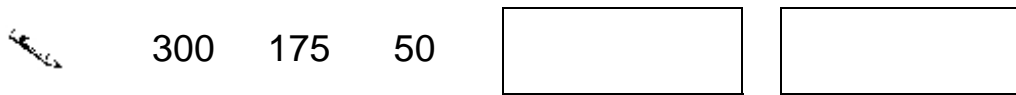
Circle the correct estimate

1000    1100    1200    1300    1400

1 mark

**4** Liam makes a sequence of numbers starting with 300  
He subtracts 125 each time.

Write the next two numbers in Liam's sequence.



2 marks

**5** The numbers in this sequence increase by 7 each time.

1   8   15   22   29   ....

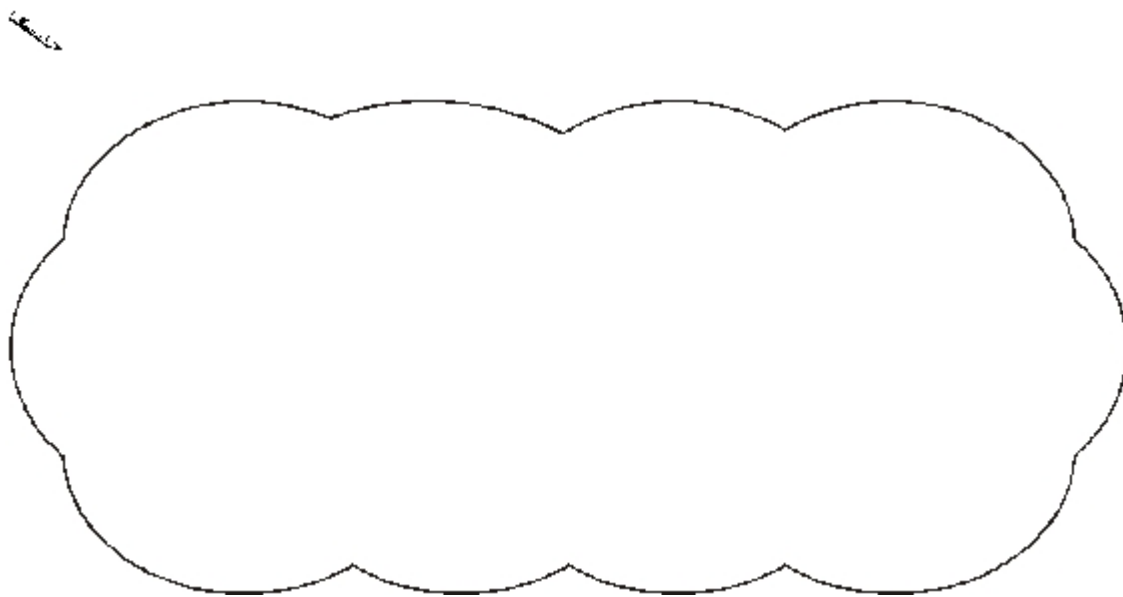
The sequence continues in the same way.

Will the number 777 be in the sequence?

Circle **Yes** or **No**.

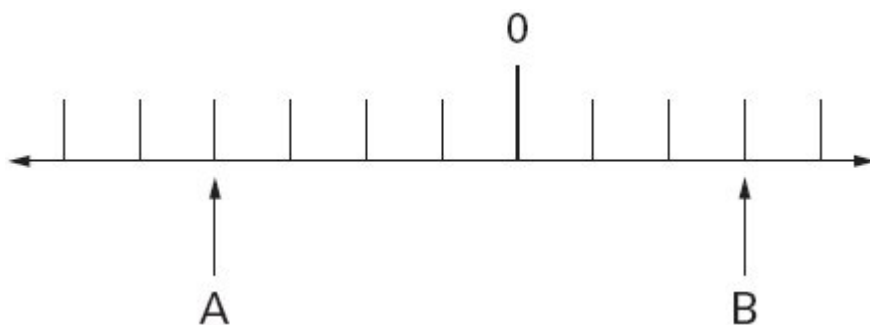
*Yes / No*

Explain how you know.



1 mark

**6** **A** and **B** are two numbers on the number line below.



The **difference** between **A** and **B** is 140

Write the values of **A** and **B**.

Show your **working**.  
You may get a mark.

A =  B =

2 marks

## Mark schemes

- 1** MMDX indicated  
*Do not accept MDCCXLIII* 1
- 1743 1
- 2** Award **TWO** marks for a multiple of 15 which is greater than 100, eg  
 105 **OR** 120 **OR** 135 **OR** 150 **OR** 300  
*Accept more than one answer if all are correct.*
- If the answer is incorrect, award **ONE** mark for evidence of appropriate method, eg:  
*Accept for **ONE** mark 30, 45, 60, 75 **OR** 90*
- 90 93 96 99 102 105 108 ...  
 90 95 100 105 110 115 ...  
 ← *Not spotting matching number (105)*
  - 90 93 96 98 101 104 107 (110) ...  
 90 95 100 105 (110) 115 ...  
 ← *One step size incorrect (96 to 98)*
  - 15 30 45 60 75 80 95 110 (125)  
 ← *One step size incorrect (75 to 80)*
  - $3 \times 5 \times 20$   
 OR  
 $15 \times 10$   
 ← *Multiple greater than 100 but not calculated*
- Answer need not be obtained for the award of **ONE** mark.*
- Up to 2
- [2]**
- 3** (1300) indicated  
*Accept any unambiguous indication*
- [1]**
- 4** (a) -75 in the first box  
*Do not accept 75-* 1
- (b) -200 in the second box  
*Do not accept 200-*  
*Accept a number 125 less than the answer to (a), provided the answer to 18a is negative.* 1
- [2]**

5

'No' is circled **AND** one of the following:

an explanation which recognises that 777 is not one more than a multiple of 7, eg:

- 'All the numbers are one more than a multiple of 7'
- 'There are no multiples of 7 in the sequence'
- '778 is in the sequence'
- '771 works but 777 doesn't'

**OR**

an explanation which recognises that 777 is a multiple of 7, eg:

- '777 is a multiple of 7'
- ' $777 \div 7 = 111$ '

**OR**

an explanation which relies solely on the start of the sequence, eg:

- 'The sequence started at 1'
- 'The sequence doesn't start at 0'.

*'No' must be indicated for the award of the mark, unless a **complete** and correct explanation is given, eg:*

- '*777 is a multiple of 7, and the numbers in the sequence aren't.*'

*No mark is awarded for circling 'No' alone.*

**Do not** accept vague or incomplete explanations, eg:

- '*It's adding 7 every time*'
- '*There are no 7s in the sequence*'.

U1

[1]

6

Award **TWO** marks for the correct answer as shown:

$$A = \boxed{-80} \quad B = \boxed{60}$$

If the answer is incorrect, award **ONE** mark for evidence of appropriate working, eg

$$140 \div 7 = 20$$

Accept 'minus 80'

**Do not** accept '80-'

Answer need not be obtained for the award of **ONE** mark.

Accept for **ONE** mark:

$A = -80$  **AND**  $B = \text{wrong answer}$  **OR**

$A = -80$  **AND**  $B = \text{blank}$  **OR**

$A = 80$  **AND**  $B = 60$  **OR**

$A = 80$  **AND**  $B = -60$  **OR**

$A = 60$  **AND**  $B = -80$

Up to 2 (U1)

[2]