

Q1.

In this sequence, the rule to get the next number is

Multiply by 2, and then add 3

Write the missing numbers.

	25	53	
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2 marks

Q2.

The numbers in this sequence **decrease** by the same amount each time.

303,604 302,604 301,604 300,604 ...

What is the next number in the sequence?

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1 mark

Q3.

The list below shows the years in which the Cricket World Cup was held since 1992:

1992, 1996, 1999, 2003, 2007, 2011, 2015

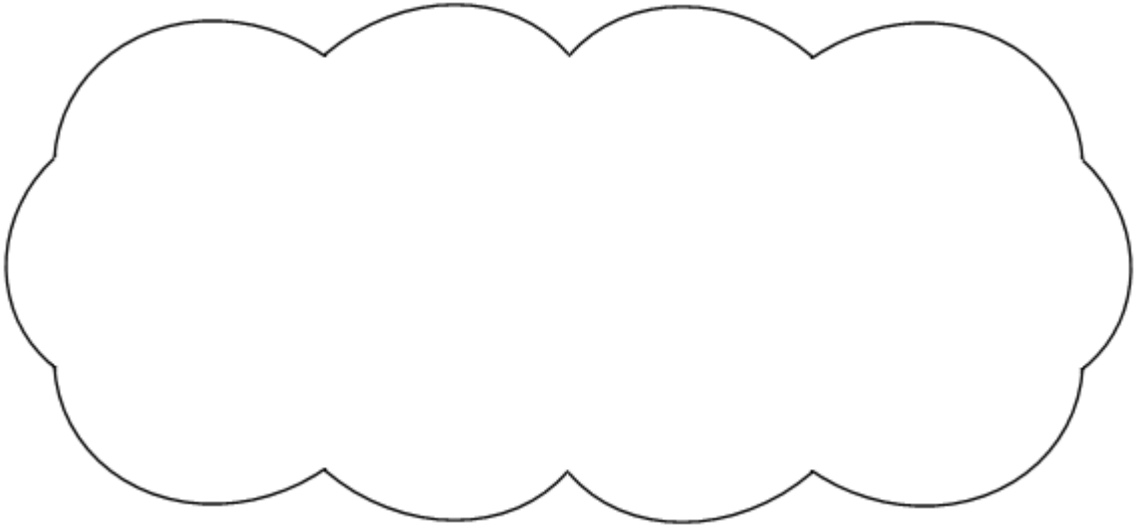
Adam says,

The Cricket World Cup has been held every four years since 1992.



Adam is **not** correct.

Explain how you know.



1 mark

Q4.

The numbers in this sequence increase by 10 each time.

3 13 23 ...

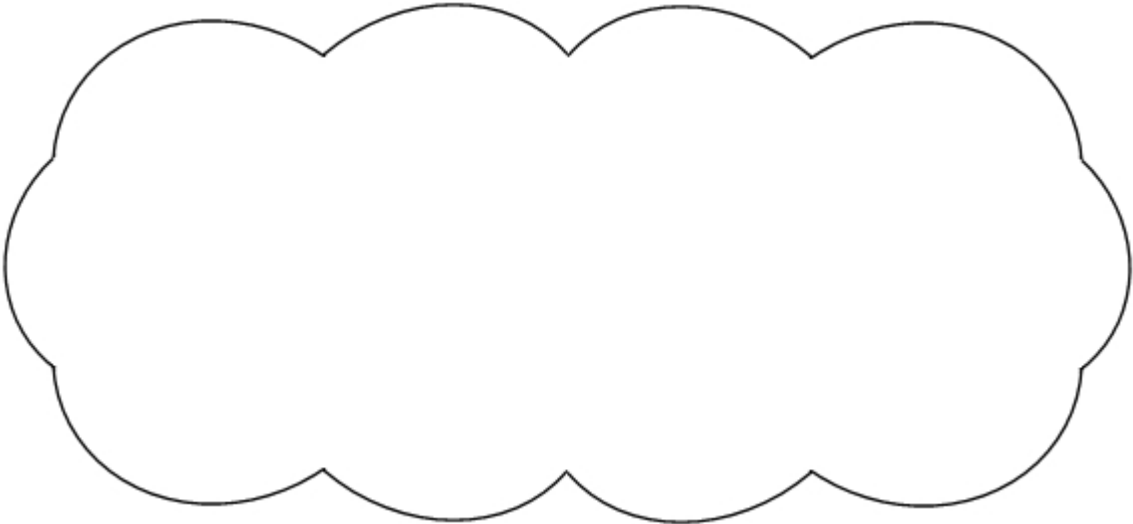
The sequence continues in the same way.

Write **two** numbers from the sequence that add to make a total of **96**

and

1 mark

Explain why it is **not** possible to find **three** numbers from the sequence that add to make a total of **96**



1 mark

Q5.

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

Mark schemes

Q1.

- (a) 11 written in the first box, as shown:

11	25	53	
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1

- (b) 109 written in the last box, as shown:

	25	53	109
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1

[2]

Q2.

299,604

[1]

Q3.

Explanation that recognises that the sequence does not always increase by four, with clear reference to the data, e.g.

- The difference between 1996 and 1999 is three years, not four so it is not always every four years
- It would be 2000 if it was every 4 years
- It should have ended in 2016

OR

Explanation that demonstrates that the sequence does not always increase by 4, but does not reference specific years from the data, e.g.

- The cricket world cup was sometimes 3 years apart instead of 4 years apart
- Not all of the years have 4 years difference between.

Do not accept vague or incomplete explanations, e.g.

- *It does not always increase by four*
- *It should be 2000*
- *The difference can be 3, 4 or 5 years at different times.*

Do not accept explanations which include incorrect mathematics or incorrect information that is relevant to the explanation, e.g.

- $1992 + 4 = 1996 + 3 = 1999$

[1]

Q4.

- (a) Two numbers from the sequence that total 96, eg:

43 **AND** 53

OR

23 **AND** 73

Numbers may be given in either order.

*Accept negative numbers, eg -7 **AND** 103*

1

(b) An explanation that recognises that adding three numbers ending in 3 will produce a number ending in a 9 eg:

- 'They all end in 3 so adding three will give a number ending in 9'
- 'If you add three numbers in the sequence you will always get a number ending in 9'
- 'All the numbers are odd and 96 is even'

Do not accept vague or incomplete explanations, eg:

- 'All the numbers end in three'
- 'It only works with two numbers'
- '3 odds add to make an even'

U1

[2]

Q5.

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
 15×10

← Multiple greater than 100 but not calculated

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

Up to 2

[2]