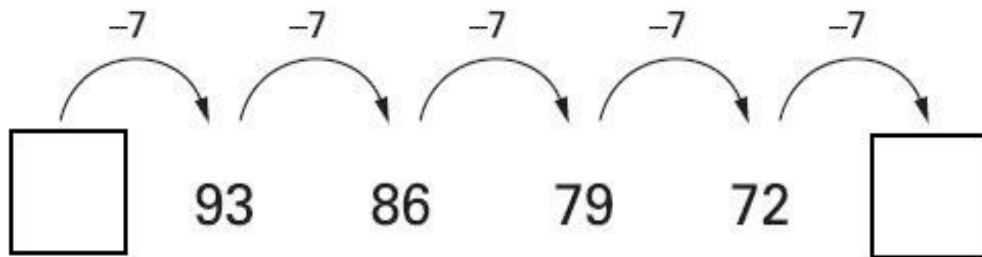


Q1.

Write the two missing numbers in this sequence.



1 mark

Q2.

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

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

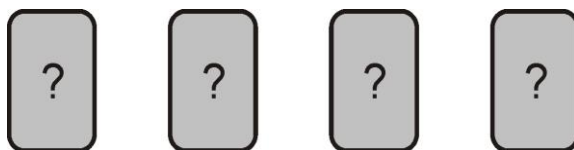
What is the next number in the sequence?

1 mark

Q3.

Debbie has a pack of cards numbered from 1 to 20

She picks four different number cards.



Exactly three of the four numbers are multiples of 5

Exactly three of the four numbers are even numbers.

All four of the numbers add up to less than 40

Write what the numbers could be.

□ □ □ □

1 mark

Q4.

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

Write in the missing numbers

1			13
---	--	--	----

1 mark

Q5.

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,



Adam is **not** correct.

Explain how you know.

Large cloud-shaped writing area for the student's explanation.

1 mark

Q6.

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

Write the missing numbers.

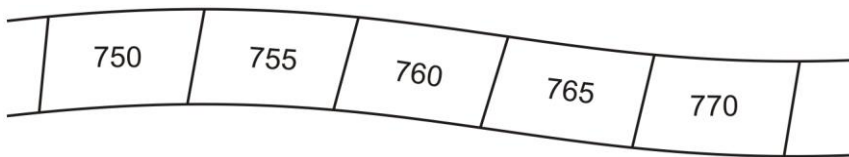
<input type="text"/>	42	49	<input type="text"/>	63	<input type="text"/>
----------------------	----	----	----------------------	----	----------------------

2 marks

Q7.

Here is part of a number sequence.

The numbers increase by the same amount each time.



The sequence continues.

Circle **all** of the numbers below that would appear in the sequence.

840 905 989 1000 2051

1 mark

Q8.

Nisha says,

***'When you halve any even number,
the answer is always an odd number'.***

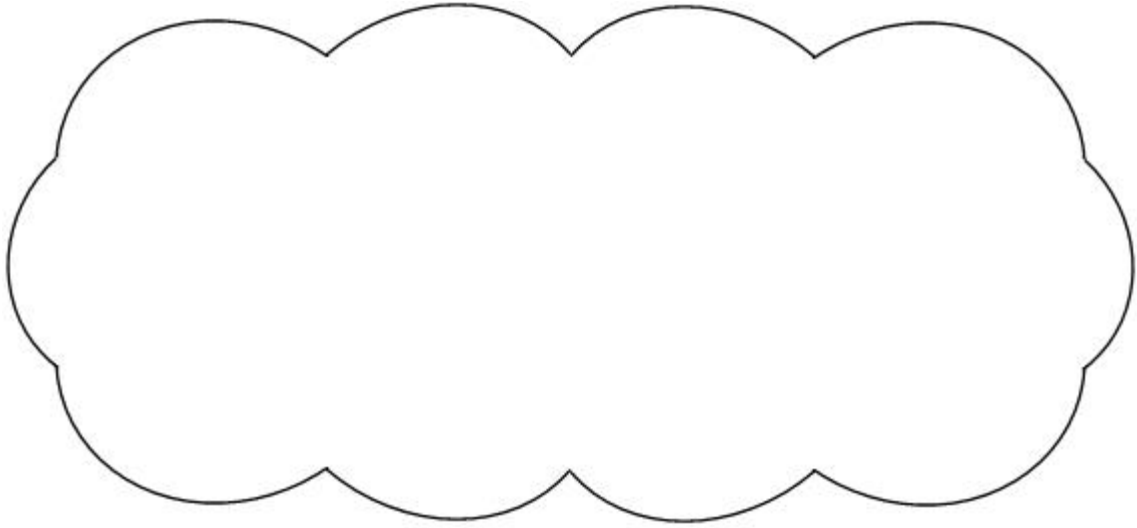


Is she correct?

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

Yes / No

Explain how you know.



1 mark

Q9.

The numbers in this sequence increase by 7 each time.

1 8 15 22 29

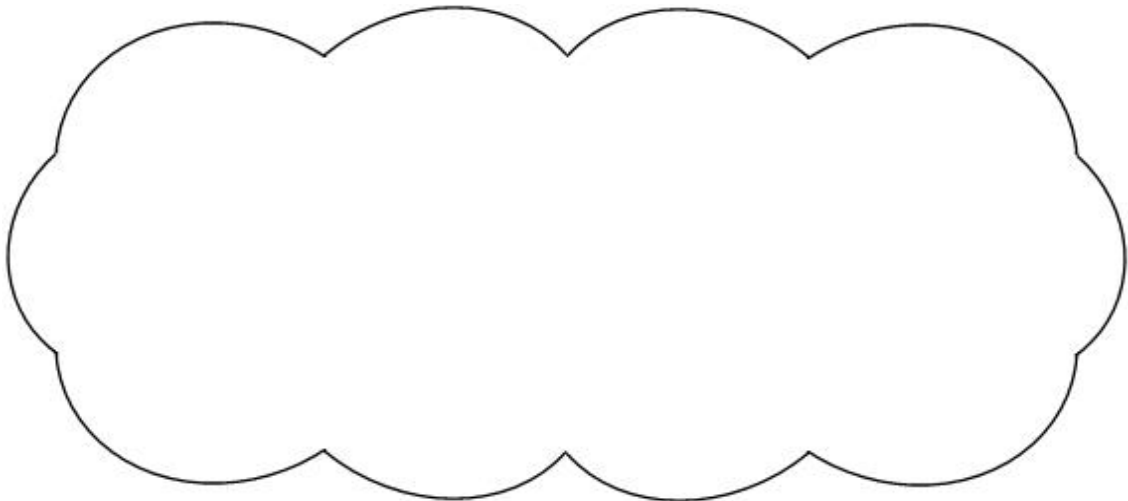
The sequence continues in the same way.

Will the number 777 be in the sequence?

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

Yes / No

Explain how you know.



1 mark

Q10.

Dev says,

'When you halve any number that ends in 8 the answer always ends in 4'.

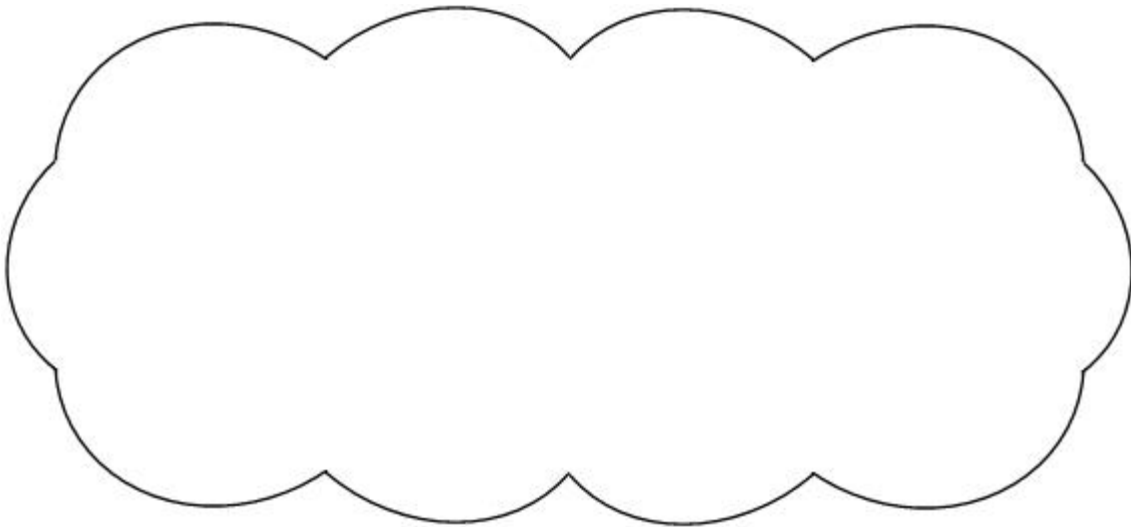


Is he correct?

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

Yes / No

Explain how you know.



1 mark

Q11.

Here is part of a number sequence.

The numbers in the sequence increase by 25 each time.

50 75 100 125 ...

Circle **all** of the numbers below that will appear in the sequence.

255 650 735 900 995

1 mark

Q12.

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

Multiply by 2, and then add 3

Write the missing numbers.

	25	53	
--	----	----	--

2 marks

Q13.

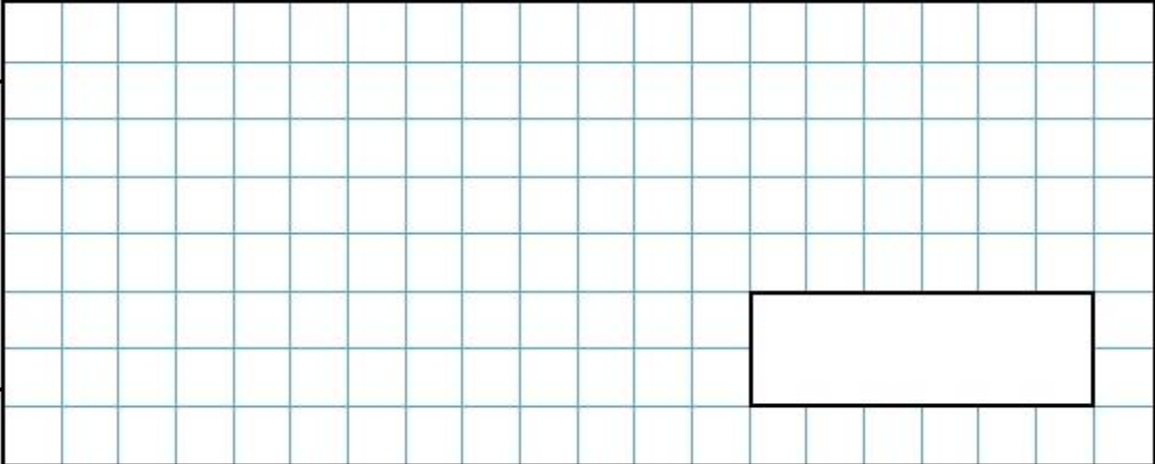
The numbers in this sequence increase by 30 each time.

20 50 80 110 ...

The sequence continues in the same way.

Which number in the sequence will be **closest to 300**?

Show your method



2 marks

Q14.

The numbers in this sequence increase by 14 each time.

Write the missing numbers.

	82	96		124	138	
--	----	----	--	-----	-----	--

2 marks

Q15.

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

Write the missing numbers.

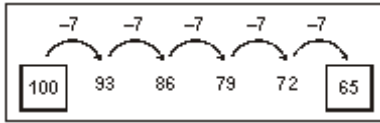
	1	$1\frac{5}{8}$	$2\frac{1}{4}$	
--	---	----------------	----------------	--

2 marks

Mark schemes

Q1.

Completes the sequence as shown:



Both numbers must be correct for the award of the mark.

[1]

Q2.

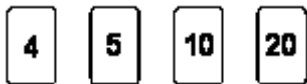
299,604

[1]

Q3.



OR



Accept the four numbers listed in any order.

U1

[1]

Q4.



[1]

Q5.

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]

Q6.

Award **TWO** marks for three correct numbers, as shown:

35

 42 49

56

 63

70

Award **ONE** mark for two numbers correctly placed.

Up to 2m

[2]

Q7.

Three numbers circled as shown:

840

905

 989

1000

 2051

Do not award the mark if additional incorrect numbers are circled.

Accept: alternative unambiguous indications, eg numbers ticked, crossed or underlined.

U1

[1]

Q8.

An explanation which recognises that half of an even number is sometimes an even number, eg:

- 'Every alternate even number gives an even number when halved'
- 'Two even numbers make an even number'
- 'Half of a multiple of 4 will always be even'
- 'Sometimes you get an even number'

OR

a counter-example demonstrating that half of an even number can be an even number, eg:

- 'Half of 8 is 4'
- ' $4 \div 2 = 2$ '
- 'Double 10 is 20'

- 'Half 12 is 6 but half 6 is 3'.

No mark is awarded for circling 'No' alone.

Do not accept vague or incomplete explanations, eg:

- 'It doesn't always work'
- 'It's always even'
- 'Half of 6 is 3'
- 'Two odds make an even'.

If 'Yes' is circled but a correct unambiguous explanation is given, then award the mark.

U1

[1]

Q9.

'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]

Q10.

An explanation which gives a counter-example to illustrate that halving a number that

ends in 8 does not always give a number ending in 4, eg:

- '18 doesn't work'
- 'It could end in a 9'
- 'Double 49 is 98'
- ' $58 \div 2 = 29$ '
- 'Half of 8 is 4 but half of 18 doesn't end in 4'
- '18, 28, 38, 48, 58, 68 – only half of them work'
- 'It has to have an even number of 10s, like 28 or 88'
- '38'

No mark is awarded for circling 'No' alone.

Do not accept vague or incomplete explanations, eg:

- 'Half of them don't'
- 'Half of 28 is 14'
- 'Double 44 is 88'

If 'Yes' is circled but a correct, unambiguous explanation is given, then award the mark.

U1

[1]

Q11.

Two numbers circled as shown:

255 (650) 735 (900) 995

Accept alternative unambiguous indications, eg numbers ticked, crossed or underlined.

[1]

Q12.

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

11	25	53	
----	----	----	--

1

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

	25	53	109
--	----	----	-----

1

[2]

Q13.

Award **TWO** marks for the correct answer of 290

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

- 110 140 170 200 230 260 290

320

Not spotting closest number.

OR

- 110 140 170 190 220 250 280

310

One step size incorrect (170 to 190).

OR

- $300 + 20 = 320$

$320 - 30 =$ wrong answer

*Working must be carried through to reach an answer for the award of **ONE** mark.*

Up to 2
U1

[2]

Q14.

Award **TWO** marks for numbers in order as shown:

68 82 96 **110** 124 138 **152**

If the answer is incorrect, award **ONE** mark for two numbers correct.

Up to 2m

[2]

Q15.

- (a) $\frac{3}{8}$ written in the first box

1

*Accept equivalent fractions or an **exact** decimal equivalent, e.g. 0.375*

- (b) $2\frac{7}{8}$ OR $\frac{23}{8}$ written in the last box

1

*Accept equivalent fractions or an **exact** decimal equivalent, e.g. 2.875*

[2]