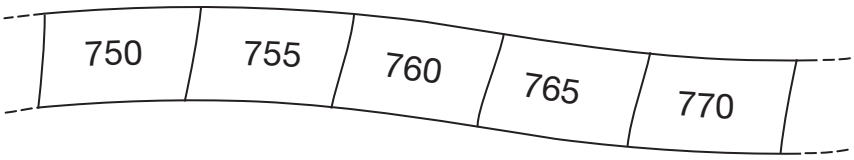
1

[2007]

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]

2

[2011]

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]

3 [2008]

The numbers in this sequence increase by 75 each time.

Write in the two missing numbers.

[2 marks]

4 [2016]

The numbers in this sequence increase by 14 each time.

Write the missing numbers.

[2 marks]

5 [2015]

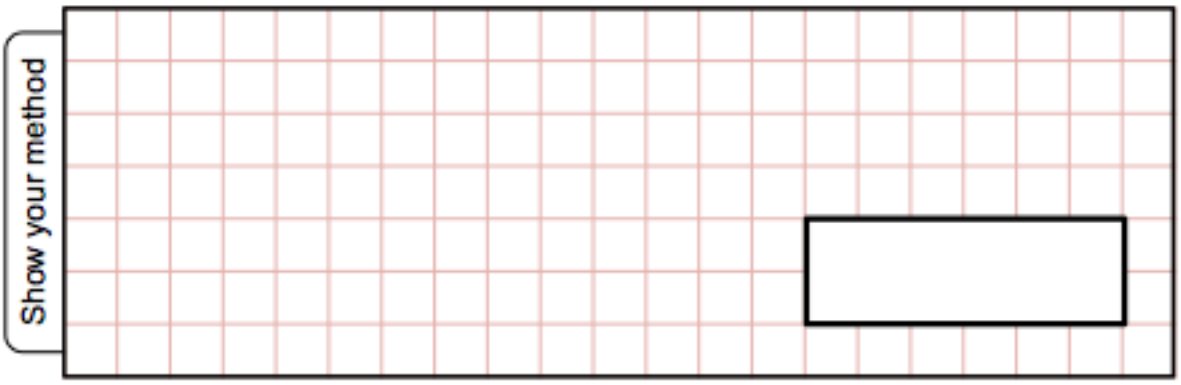
The numbers in this sequence increase by 30 each time.

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]

6 [2011]

The numbers in this sequence increase by 3 each time.

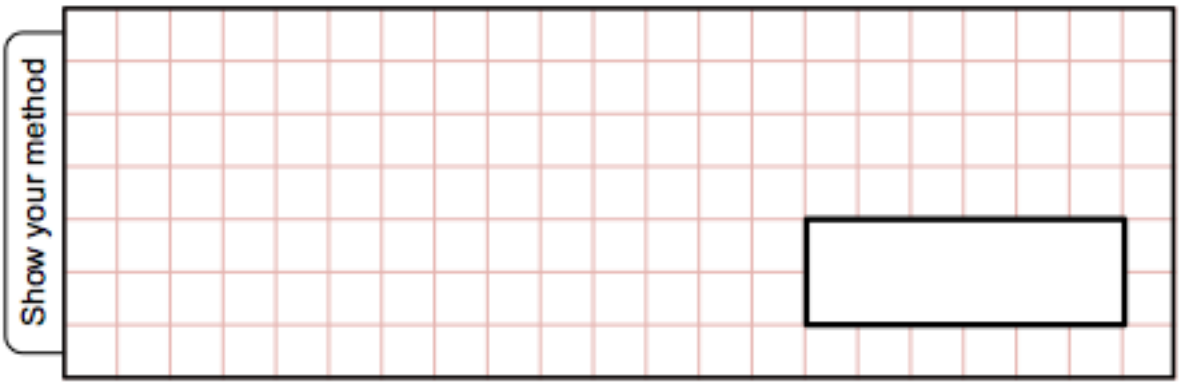
3 6 9 12 . . .

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.



[2 marks]

7 [2006]

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

Write in the missing numbers.

[1 mark]

8 [2014]

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** ☐

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

[2 marks]

9 [2014]

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

Write the two missing numbers.

 ☐ 610 650 690 ☐

[2 marks]

10 [2001]

The rule for this sequence of numbers is **'add 3 each time'**.

1 4 7 10 13 16 ...

The sequence continues in the same way.

Mary says,

'No matter how far you go there will never be a multiple of 3 in the sequence'.

Is she correct?
Circle Yes or No.

Yes / No

Explain how you know.

[1 mark]

11 [2010]

Liam makes a sequence of numbers starting with 300

He subtracts 125 each time.

Write the next two numbers in Liam's sequence.

300 175 50 ☐ ☐

[2 marks]

12 [2002]

A sequence starts at **500** and **80** is **subtracted** each time.

500 420 340 ...

The sequence continues in the same way.

Write the **first two numbers** in the sequence which are **less than zero**.

[2 marks]

13 [2000]

This sequence of numbers **goes up by 40** each time.

40 80 120 160 200 ...

This sequence continues.

Will the number **2140** be in the sequence?
Circle Yes or No.

Yes / No

Explain how you know.

[1 mark]

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

[2017]

Write the missing numbers.

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

[2 marks]

15 The numbers in this sequence increase by 7 each time.

[2008]

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]

16 The numbers in this sequence increase by equal amounts each time.

[2015]

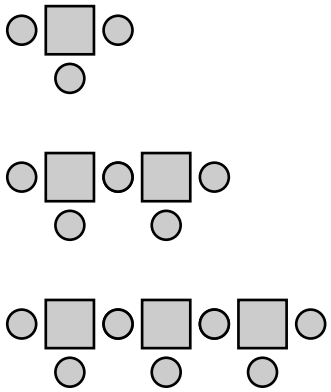
Write in the three missing numbers.

1				7

[1 mark]

17 Here is a sequence of patterns made from squares and circles.

[2001]



number of squares	number of circles
1	3
2	5
3	7

The sequence continues in the same way.

Calculate how many **squares** there will be in the pattern which has **25 circles**.

Show your method

[2 marks]

18 [2002]

Paulo makes a sequence of numbers.

He chooses a starting number and then subtracts equal amounts each time.

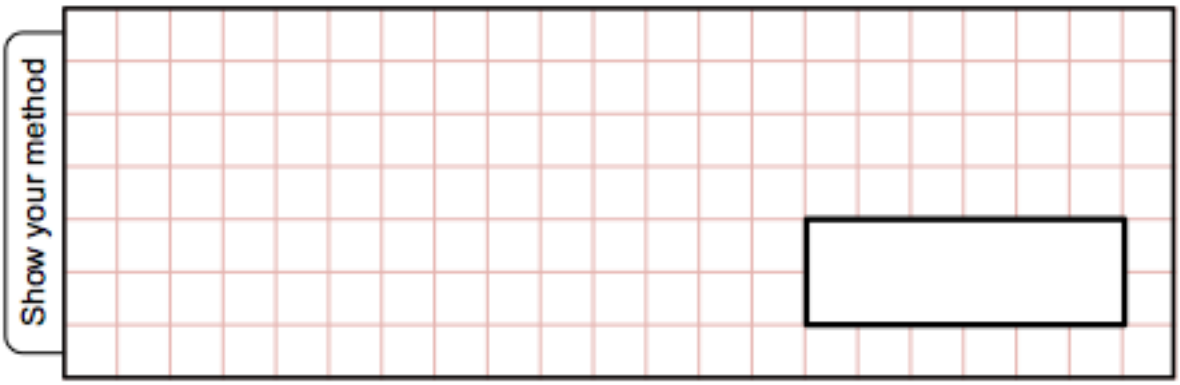
The **third number** in his sequence is **45**

The **tenth number** is **–32**

		45							**–32**

What is the **first** number in the sequence?

Show your method



[2 marks]

19 [2000]

Look at the sequence below.

To get the next term in the sequence, **subtract 90** from the term before.

500 410 320 ...

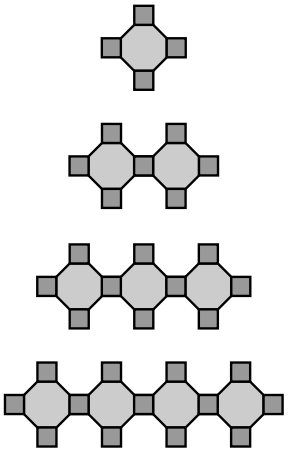
Write the first two terms of the sequence that are **less than zero**.

_____ , _____

[2 marks]

20 Here is a sequence of patterns made from **octagons** and **squares**.

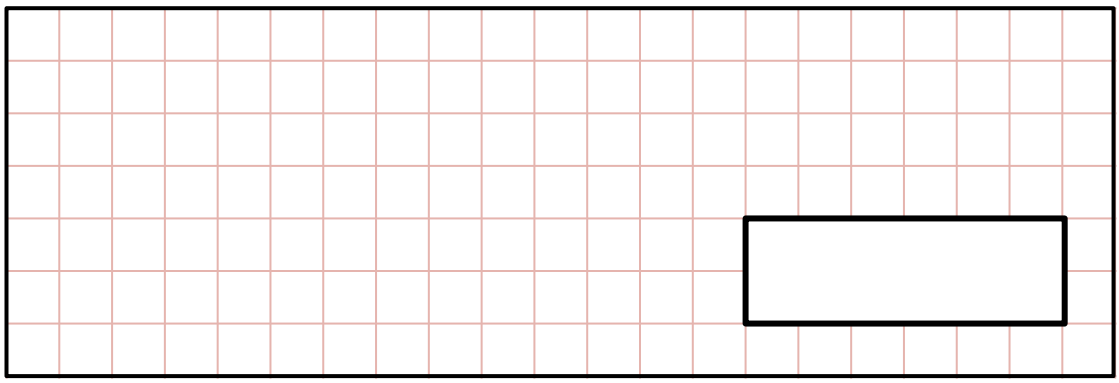
[2001]



number of octagons (**n**)	number of squares (**q**)
1	4
2	7
3	10
4	13

The sequence continues.

How many **squares** will there be in the pattern that has **40 octagons**?



q represents the number of squares.

n represents the number of octagons.

What is the rule connecting **q** and **n**?

. . . . . .

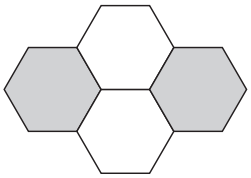
. . . . . .

. . . . . .

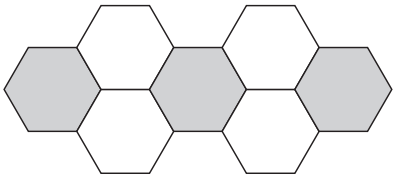
[3 marks]

21 Look at this sequence of patterns made with hexagons.

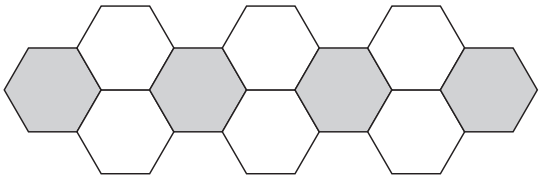
[2000]



pattern number **1**



pattern number **2**



pattern number **3**

To find the number of hexagons in pattern number n you can use these rules:

Number of **grey** hexagons	=	$n + 1$
Number of **white** hexagons	=	$2n$

Altogether, what is the total number of hexagons in **pattern number 20**?

Show your method

[2 marks]