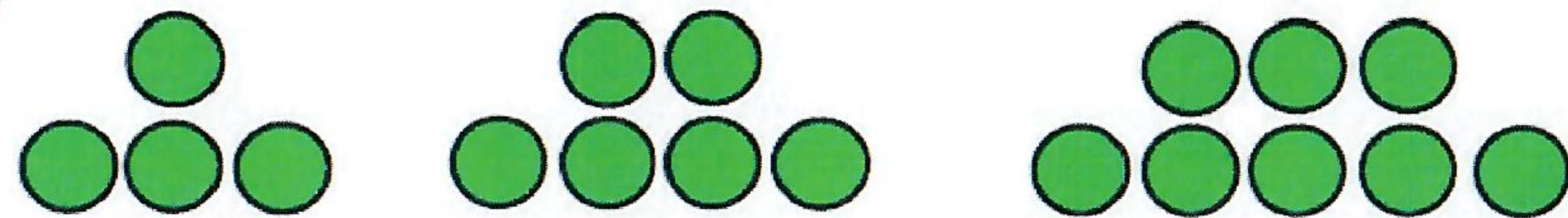# Year 7 Assessment
Sequences 1

Total Score /20

Name: _____Answers_____

1 Here are the first three terms in a sequence.

Draw the next term in the sequence.

OOOO
OOOOOO

1 mark

How many circles will make up the 7th term?

$2n + 2 = 2(7) + 2 = 16$

_____16_____

1 mark

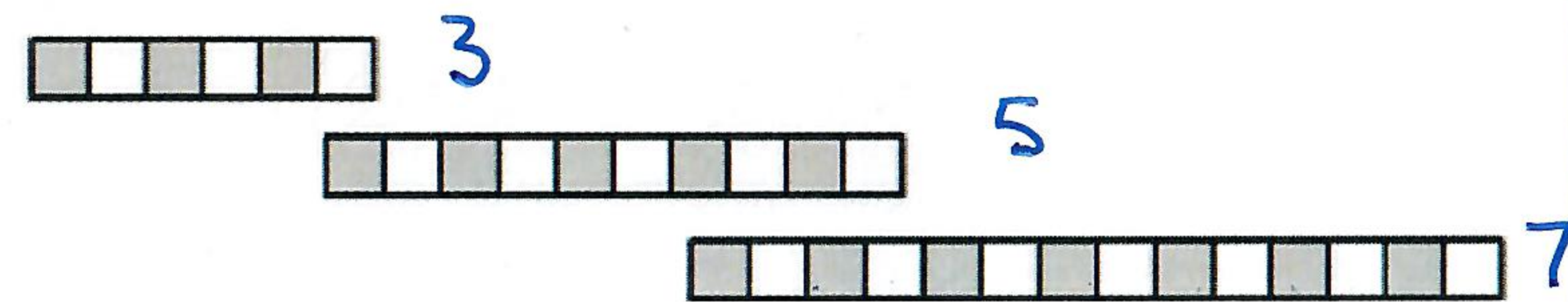**2** Find the next two terms in each of the linear sequences.

65, 53, 41, __29__, __17__

12, 4, -4, __-12__, __-20__

2.25, 3.45, 4.65, __5·85__, __7·05__,

3 marks

3

3

5

7

How many grey squares would there be in the 4th term of this sequence?

_____9_____

1 mark

How many white squares would there be in the 19th term of the sequence?

$2n + 1 = 2(19) + 1 = 39$ __39__
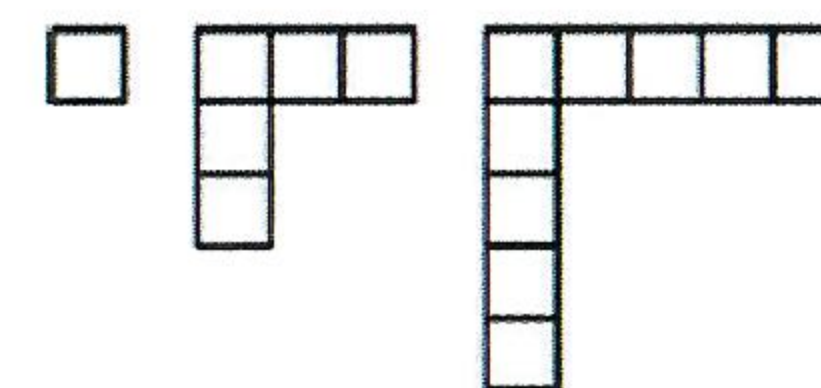
1 mark

4 Tick all the sequences that are linear.

2, 8, 32, 128, 512   ☐

6.7, 6.3, 5.9, 5.5, 5.1   ☑

☑

1 mark

5 Create two **different** linear sequences that both start with the number 90

90, __92__, __94__, __96__

90, __80__, __70__, __60__

2 marks

There are an infinite number of answers here. As long as they change by the same amount each time.
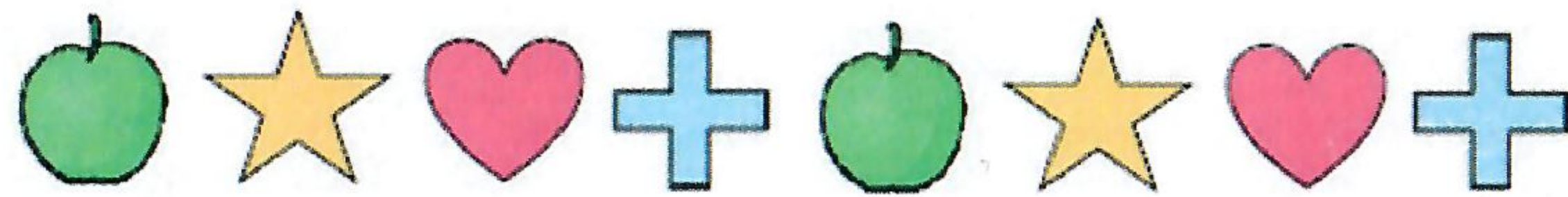
6 Find the next two terms in these geometric sequences.

3, 9, 27, __81__, __243__

6000, 600, 60, __6__, __0.6__

2 marks

7 This pattern repeats every four terms as shown.

🍏⭐❤️➕🍏⭐❤️➕

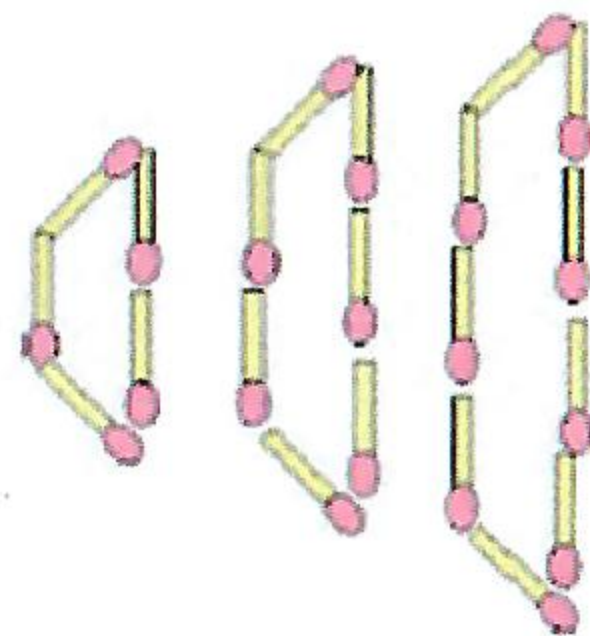What will be the 16th term in the pattern?

__Blue cross__

1 mark

What will be the 31st term in the pattern?

__Red heart__

1 mark

8 Complete the table to represent the sequence.

Term	1	2	3	4
Number of matches	5	7	9	11

1 mark

Would the points of the graph of this sequence lie on a straight line? Explain your answer.

Yes they would because the sequence increases by the same amount each time so it is linear.

1 mark

9 Find the missing terms in these linear sequences.

5, __7__, 9

__$3\frac{2}{3}$__, 5, __$6\frac{1}{3}$__, __$7\frac{2}{3}$__, 9

2 marks

10 Find the next two terms in this sequence.

7, 8, 10, 13, __17__, __22__
+1   +2   +3   +4   +5

1 mark

11 These numbers make up two linear sequences.

| 2 | 3 | 4 | 6 | 7 | 8 | 11 | 15 |

What are the two linear sequences?

1st __2__, __4__, __6__, __8__

2nd __3__, __7__, __11__, __15__
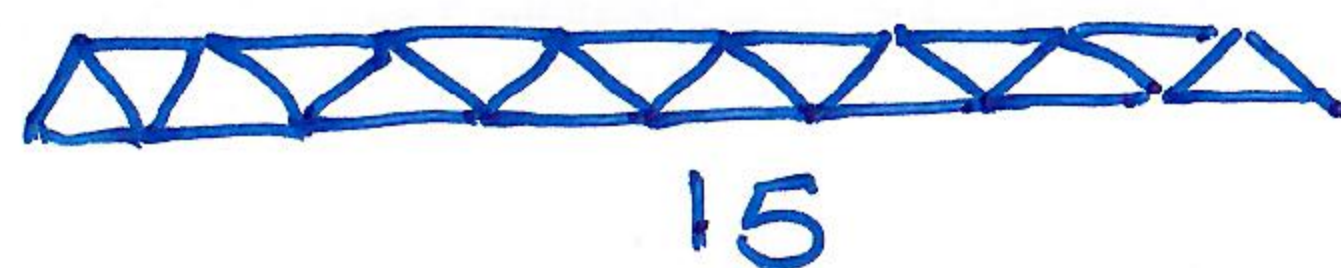
1 mark

Name: _Answers_

1 Here are the first three terms in a sequence.

6   9   12

Draw the next term in the sequence.

15

1 mark

How many triangles will make up the 5ᵗʰ term?

Adding 3 each time...

18

1 mark

2 Find the next two terms in each of the linear sequences.

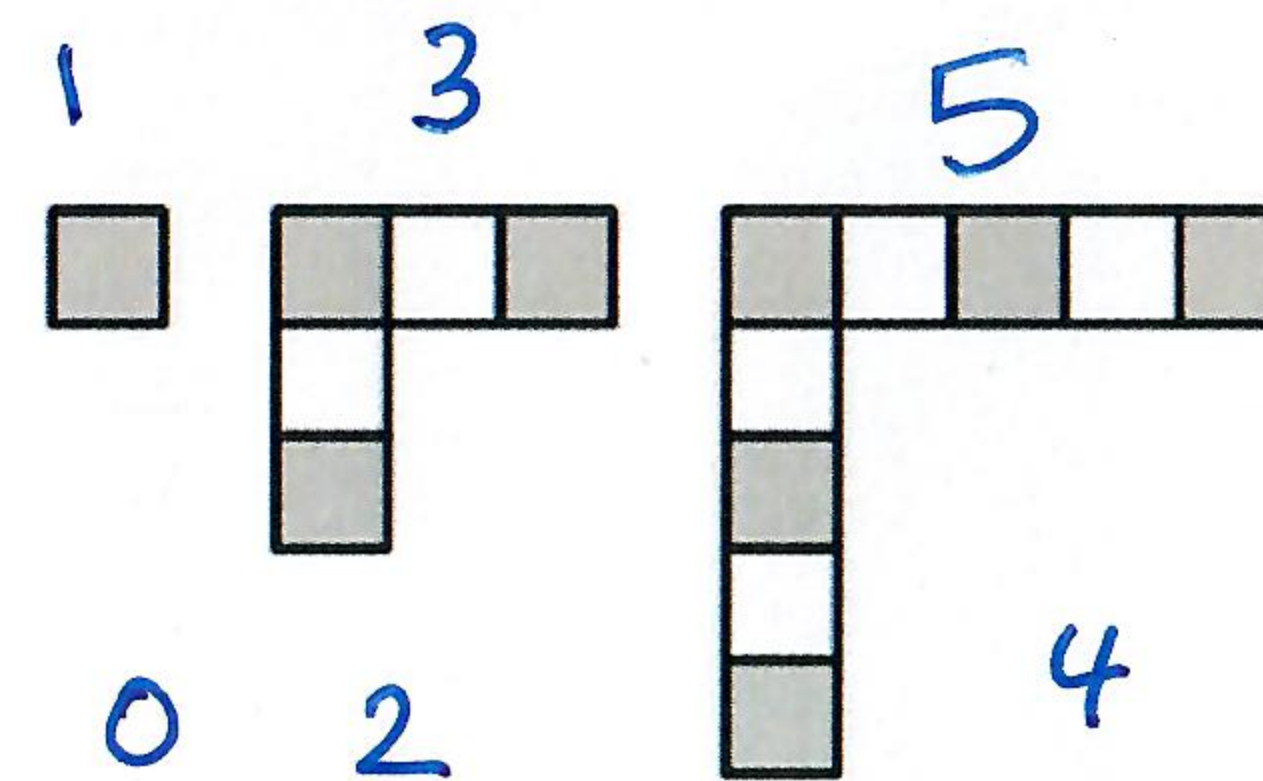95, 87, 79, __71__, __63__ (-8)

-12, 2, 16, __30__, __44__ (+14)

8.99, 10, 11.01, __12.02__, __13.03__, (+1.01)

3 marks

3

1   3   5

0   2   4

How many grey squares would there be in the 4ᵗʰ term of this sequence?

__7__

1 mark

How many white squares would there be in the 19ᵗʰ term of the sequence?

$2n - 2 = 2(19) - 2 =$ __36__

1 mark

4 Tick the sequence that is linear.

1, 8, 27, 64, 125 ☐

-2, 2, -2, 2, -2 ☐

$x + 2$, $x + 6$, $x + 10$, $x + 14$ ☑

1 mark

5 Create two **different** linear sequences that both start with the number 25

25, __30__, __35__, __40__

25, __24__, __23__, __22__

2 marks

There are infinite possibilities. As long as they go up or down by the same amount each time, then they are linear and correct.

6 Find the next two terms in these geometric sequences.

5, 10, 20, __40__ , __80__

9000, 900, 90, __9__ , __0.9__
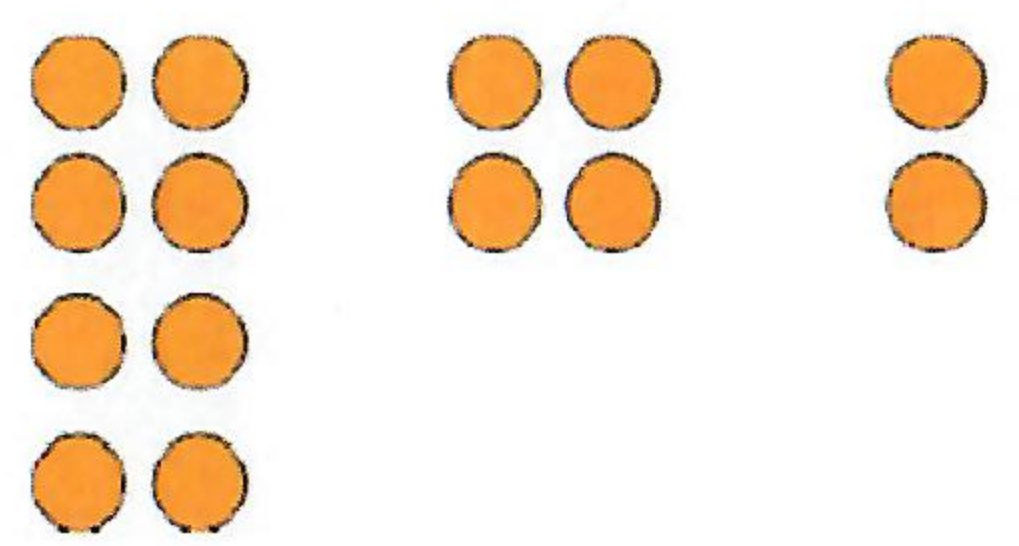
7 This pattern repeats every four terms as shown.

What will be the 20th term in the pattern?

__Purple diver__

What will be the 41st term in the pattern?

__Red hiker__

8 Complete the table to represent the sequence.

Term	1	2	3	4
Number of circles	8	4	2	1

Would the points of the graph of this sequence lie on a straight line? Explain your answer.

No. This is a Geometric as opposed to arithmetic linear sequence.

9 Find the missing terms in these linear sequences.

15, __12__ , 9 $\frac{15-9}{2} = 3$ 15-3=12

__17__ , 15, __13__ , __11__ , 9

$\frac{15-9}{3} = 2$

10 Find the next two terms in this sequence.

7, 9, 12, 16, __21__ , __27__
+2 +3 +4   +5   +6

11 These numbers make up two linear sequences.

| -2 | 3 | 4 | 6 | 9 | 10 | 12 | 16 |

What are the two linear sequences?

1st __3__ , __6__ , __9__ , __12__

2nd __-2__ , __4__ , __10__ , __16__

Year 7 Assessment
Sequences 3

Total Score /20

achildsguideto

Name: _____Answers_____

1 Here are the first three terms in a sequence.

 5   9   13

1 mark

Draw the next term in the sequence.

17

How many squares will make up the 5th term?

$4n + 1$

_____21_____

1 mark

2 Find the next two terms in each of the linear sequences.

3, 8, 13, ___18___, ___23___ (+5)

8000, 7200, 6400, ___5600___, ___4800___ (-800)

6.27, 7.48, 8.69, ___9.9___, ___11.11___,

(+1.21)

3 marks

3

+1   +2   +3

2   3   5   8

How many grey squares would there be in the 5th term of this sequence?

_____12_____

1 mark

How many white squares would there be in the 8th term of the sequence?

_____0_____

1 mark

4 Tick the sequence that is linear.

-3, 8, 5,   13, 18   ☐

-1, 2,   -3,   4,   -5   ☐

2k + 2 ,   2k + 6.   2k + 10, 2k + 14   ☑

1 mark

5 Create two **different** linear sequences that both start with the number 25

25, ___24___, ___23___, ___22___

25, ___26___, ___27___, ___28___

2 marks

Infinite number of correct answers.
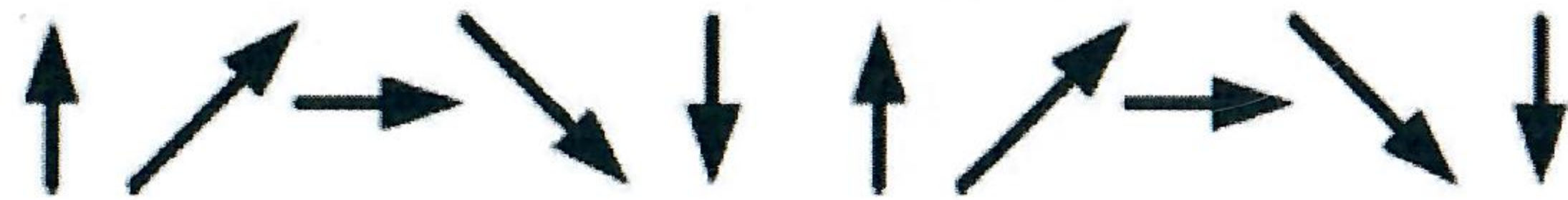Needs to change by the same amount each time.

6 Find the next two terms in these geometric sequences.

5, 10, 20, __40__ , __80__

9000, 900, 90, __9__ , __0.9__

7 This pattern repeats every five terms as shown.

↑ ↗ → ↘ ↓ ↑ ↗ → ↘ ↓

What will be the 25th term in the pattern?

↓ _____

What will be the 21st term in the pattern?

↑ _____

8 Complete the table to represent the sequence.

Term	1	2	3	4
Number of circles	3	7	12	18
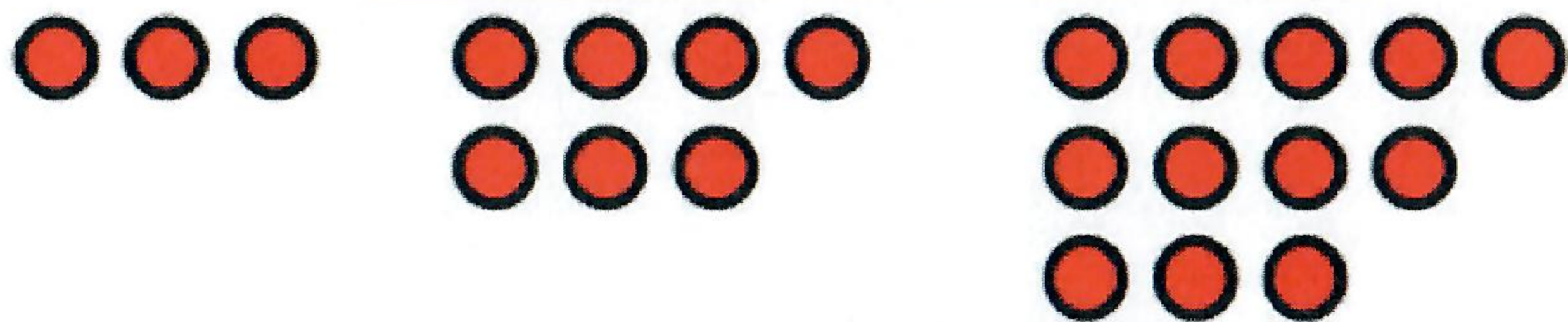
Would the points of the graph of this sequence lie on a straight line? Explain your answer.

No because the difference between terms keeps increasing by one.

9 Find the missing terms in these linear sequences.

15, __12__ , 9

__17__ , 15, __13__ , __11__ , 9

10 Find the next two terms in this sequence.

2, 4, 7, 11, __16__ , __22__
+2 +3 +4 +5 +6

11 These numbers make up two linear sequences.

2 3 4 6 6 8 9 12

What are the two linear sequences?

1st __2__ , __4__ , __6__ , __8__

2nd __3__ , __6__ , __9__ , __12__