

Maths

Find terms of a linear sequence

Mr Chan

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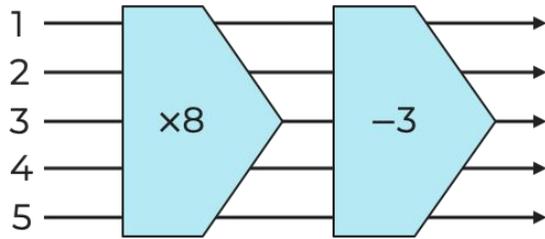


Find terms of a linear sequence

1. The n th term of a sequence is $8n - 3$

Find the first 5 terms.

This function machine may help you.



2. Generate the first 5 terms of these linear sequences.

a) $5n - 9$

b) $9 - 4n$

c) $1.2n + 3$

d) $-0.5n - 0.2$

3. Complete the table.

| First five terms | n th term | 50 th term | 100 th term |
|--------------------|-------------|-----------------------|------------------------|
| | $2n - 7$ | | |
| $-3, -7, -11, -15$ | | | |
| | $1.6n + 2$ | | |

Jack says 'I will substitute to get the 50th term, then just double it to get the 100th term'.

Comment on Jack's strategy.



Find terms of a linear sequence

4. Here is a linear sequence

4, 9, 14, 19, 24,

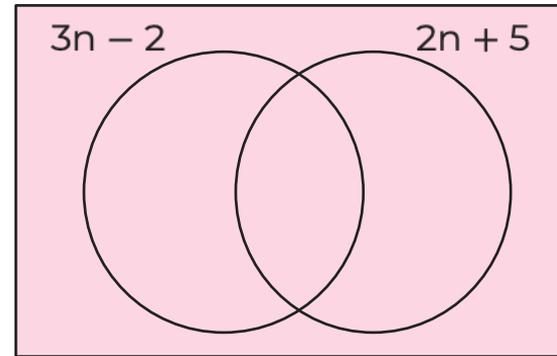
Explain how you know that 217 is not a term in this sequence.

5. Alex says that 172 is a term in the sequence $3n - 2$

Is she correct?

Justify your answer.

6. The labels on this Venn diagram are the n th term of linear sequences. Complete with the numbers 1 - 20



Look at the intersection of the two sets, what sequence are the numbers the first three terms of?



Answers

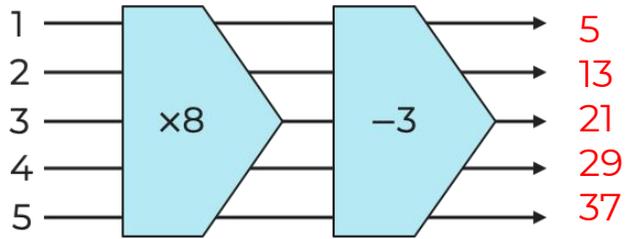


Find terms of a linear sequence

1. The n th term of a sequence is $8n - 3$

Find the first 5 terms.

This function machine may help you.



2. Generate the first 5 terms of these linear sequences.

a) $5n - 9$
-4, 1, 6, 11, 16

b) $9 - 4n$
5, 1, -3, -7, -11

c) $1.2n + 3$
4.2, 5.4, 6.6, 7.8, 9

d) $-0.5n - 0.2$
-0.7, -1.2, -1.7, -2.2, -2.7

3. Complete the table.

| First five terms | n th term | 50 th term | 100 th term |
|------------------------|-------------|-----------------------|------------------------|
| -5, -3, -1, 1, 3 | $2n - 7$ | 93 | 193 |
| -3, -7, -11, -15 | $-4n + 1$ | -199 | -399 |
| 3.6, 5.2, 6.8, 8.4, 10 | $1.6n + 2$ | 82 | 162 |

Jack says 'I will substitute to get the 50th term, then just double it to get the 100th term'.

Comment on Jack's strategy.

This will also double the constant in the n th term and give an incorrect answer.



Find terms of a linear sequence

4. Here is a linear sequence

4, 9, 14, 19, 24,

Explain how you know that 217 is not a term in this sequence.

All terms have 4 or 9 ones and 217 has 7 or
Every term is 1 less than the 5 times table and 217 is 3 less.

5. Alex says that 172 is a term in the sequence $3n - 2$

Is she correct?

$$3n - 2 = 172$$

$$3n = 174$$

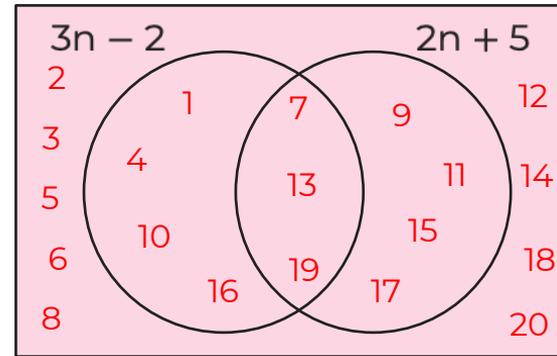
Justify your answer.

$$n = 58$$

A positive integer solution indicates it is in the sequence, it's the 58th term.

6. The labels on this Venn diagram are the n th term of linear sequences.

Complete with the numbers 1 - 20



Look at the intersection of the two sets, what sequence are the numbers the first three terms of?

$6n + 1$ or $-6n + 25$

