

# Find terms of a linear sequence

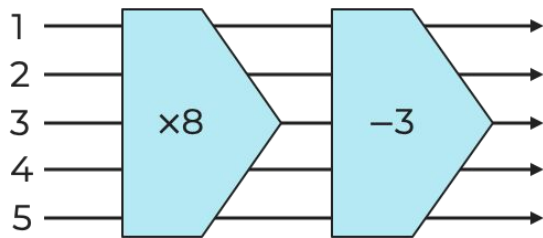


# Find terms of a linear sequence

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 <sup>th</sup> term	100 <sup>th</sup> term
	$2n - 7$		
$-3, -7, -11, -15$			
	$1.6n + 2$		

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

Comment on Jack's strategy.



# Find terms of a linear sequence

4. Here is a linear sequence

4, 9, 14, 19, 24, ....

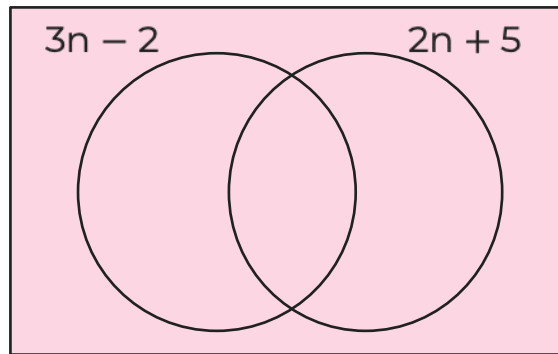
Explain how you know that 217 is not a term in this sequence.

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

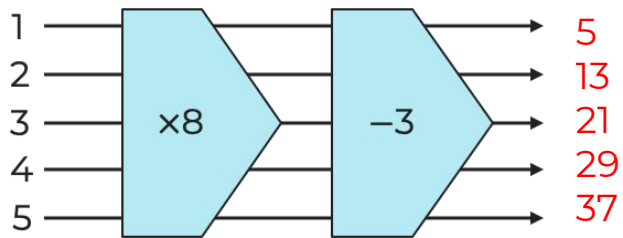


# Find terms of a linear sequence

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 <sup>th</sup> term	100 <sup>th</sup> 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 50<sup>th</sup> term, then just double it to get the 100<sup>th</sup> 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?

$$3n - 2 = 172$$

$$3n = 174$$

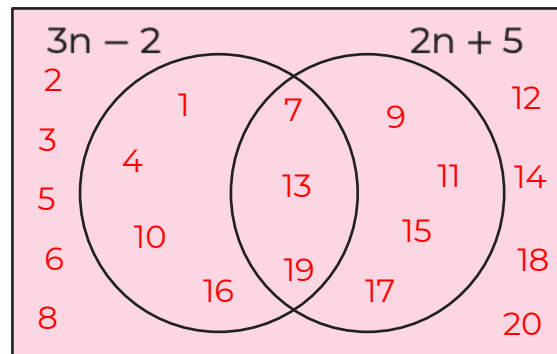
Justify your answer.

$$n = 58$$

A positive integer solution indicates it is in the sequence, it's the 58<sup>th</sup> 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  $-6n + 25$

