THIRD SPACE LEARNING

# HELLO!

Today we are going to revise Solving Equations & Linear Number Sequences

Use the space under each question to show your working out.

# Arithmetic Warm Up

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The rule is add 4,500. What are the missing numbers?

18,000 22,500

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# Revision on Algebra


## Today we are going to revise how to:

- solve equations
- create, describe and continue linear number sequences (number patterns)

You are revising solving equations & linear number sequences (Meeting Y6 expectations)

# Revision: Solving equations

You can think of the equal sign (=) as a set of balancing scales. In order to solve an equation, the numbers need to balance.

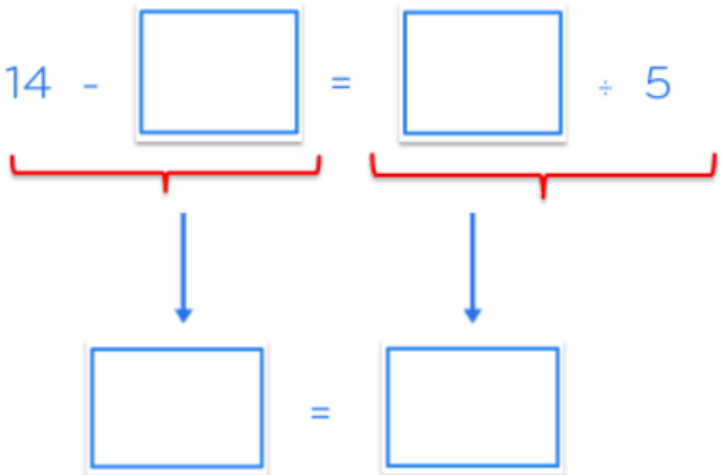
What numbers could go in the boxes to make this equation equal?

$$7 \times \square = \square + 16$$

$$\square = \square$$

# Revision: Solving equations

1. Solve this one




2. Think of another pair of numbers that could solve this equation.

# Question 1

1. What do you notice?
2. What do you know?
3. Can you show your working out?
4. How could you extend the question?

Complete

If ★ and ☺ stand for two different whole numbers,

and: ★ + ☺ = 18 ★ x ☺ = 45

Find the value of each shape

★ = ☺ =

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# Revision: Linear number sequences

## Term to term

A number sequence is a pattern of numbers that follow a rule.

1. Fill in the missing terms 11, 18, 25, 32, ☐ , ☐

The rule is: ☐

So what number would go before 11? How did you work it out? ☐

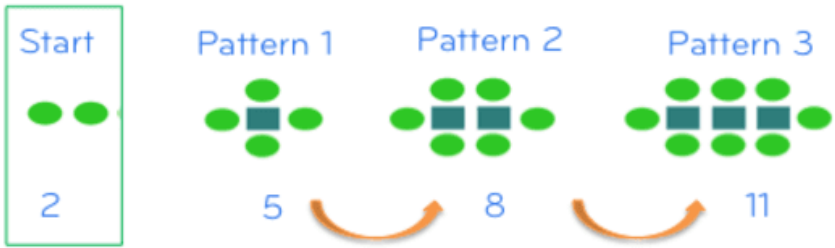
2. Now try this one 27, 21, 15 , ☐ , 3 , ☐

The rule is: ☐

So what number would go before 27? How did you work it out? ☐

# Revision: Linear number sequences

## Position to term




The **term** to term rule is:

| Pattern number (n) | 0 | 1 | 2 | 3 | 10 | 25 |
|---|---|---|---|---|---|---|
| Number of counters (C) | 2 | 5 | 8 | 11 | | |

+3 +3 +3

Start with the third position (n=3) because we already know the answer = 11


The **position** to term rule is:

- The first part of the rule = 3n...Why?
- 3n = 3 (3) = 9....what do I need now for my rule to work?
- Check if that rule works with the previous positions

# Question 3

1. What do you notice?
2. What do you know?
3. Can you show your working out?
4. How could you extend the question?

Complete

4, 9, 14, 19, 24

Tick the rule that describes the sequence of numbers

n = pattern number

2n + 5 | 4n - 2 | 5n -1 | 3n + 5

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## Let's review:

- I can solve simple equations.
- I can create, describe and continue linear number sequences using a formula.

Draw a circle around the smiley face to show how you feel about what we've just been doing.



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# CHALLENGE

1. What do you notice?
2. What do you know?
3. Can you show your working out?
4. How could you extend the question?

Complete

If ★ and ☺ stand for two different whole numbers,

and:

★ + ☺ = 17 ★ x ☺ = 72

Find the value of each shape

★ = ☺ =

# Solving missing number problems with two missing numbers

Find at least three pairs of solutions for ? × 4 = ?

? = ☐ ? = ☐

? = ☐ ? = ☐

? = ☐ ? = ☐

# Solving missing number problems with two missing numbers

Find three pairs of solutions for each question.

1. $47 = 2 \times \square + \square$

2. $28 + \square = 93 - \square$

3. $\square \times 3 + \square = 63$

| | | | |
|---|---|---|---|
| ? = | | ? = | |
| ? = | | ? = | |
| ? = | | ? = | |

| | | | |
|---|---|---|---|
| ? = | | ? = | |
| ? = | | ? = | |
| ? = | | ? = | |

| | | | |
|---|---|---|---|
| ? = | | ? = | |
| ? = | | ? = | |
| ? = | | ? = | |

# Continue linear sequences

Continue these linear sequences:

1. 17 23 29 35 ☐ ☐
2. 238 299 360 421 ☐ ☐
3. 194 182 170 158 ☐ ☐
4. 6 1 -4 -9 ☐ ☐

# Finding the nth term for linear sequences with contexts

**4** people can sit at **a table**.

How many people can sit at:

2 tables

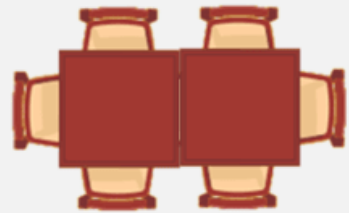
3 tables

4 tables

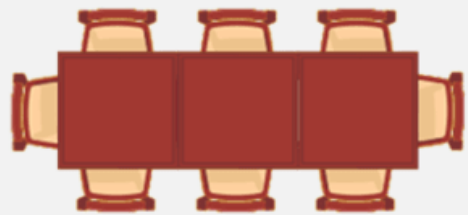
25 tables

1 table

Tables must be arranged side by side



2 tables



3 tables

# Finding the nth term for linear sequences with contexts

How many people can sit at:

50 tables

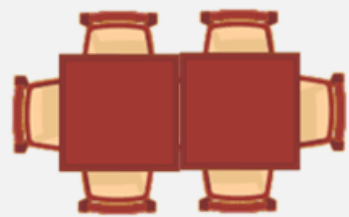
20 tables

n tables

43 tables

Tables must be arranged side by side

4 people can sit at **a table**.

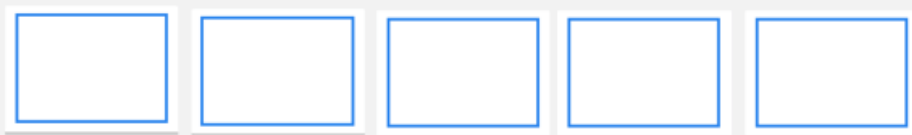


6 people can sit at **two tables**.

# Finding the nth term for linear sequences without contexts

The first term of a linear sequence is 5.
The second term of the same sequence is 10.
The third term is 15.

Write the first 5 terms of this sequence:



What is the $10^{th}$ term of this sequence?

What is the $100^{th}$ term of this sequence?

What is the $n^{th}$ term of this sequence?

What is the $126^{th}$ term of this sequence?

# Finding the nth term for linear sequences without contexts

Draw a line from each linear sequence to the correct expression for its $n^{th}$ term.

| | | | | | |
|---|---|---|---|---|---|
| 5 | 10 | 15 | 20 | 25 | 30 |
| 6 | 11 | 16 | 21 | 26 | 31 |
| 7 | 14 | 21 | 28 | 35 | 42 |
| 6 | 13 | 20 | 27 | 34 | 41 |

7n

5n + 1

7n -1

5n

# Question 2

Complete

1. What do you notice?
2. What do you know?
3. Can you show your working out?
4. How could you extend the question?

| Position (p) | 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|
| Term | | 9 | 16 | 23 | 30 |

1) The **term** to term rule is:

2) The **position** to term rule is:

3) The $11^{th}$ term is: