



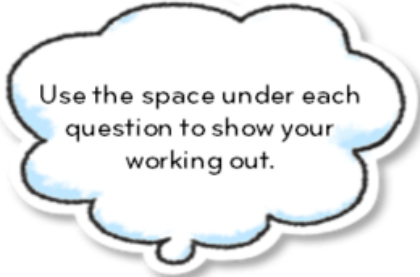
THIRD SPACE
LEARNING



HELLO!

Today we are going to revise using
formulae

Arithmetic Warm Up



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

Write the value of each expression if $a = 4$ and $b = 3$.

1)

$4(6 - b) =$

2)

$4a + b =$



THIRD SPACE
LEARNING

Revision on Algebra

Today we are going to revise how to:



use words, letters or shapes to represent unknown number in formulae.



use formulae to find an amount

Revision: Understanding and using formulae

Words, letters and shapes are used in algebra to represent actual numbers.

The amount of pocket money Kate gets each week depends on the amount of chores she completes. This formula (rule) shows how her pocket money is calculated.



$$T = 35c + 50$$

T = the total amount of pocket money Kate gets in pence.

c = the number of chores she completes.



If Kate completes 4 chores this week, how much pocket money will she get?

Revision: Creating and using formulae



Abby gets paid £10 for delivering leaflets and then gets an extra 20p for each leaflet given out.

If: **T** = the total amount of money Abby earns in pence
L = the number of leaflets she delivers

Now write a formula to represent this situation:



If Abby delivers 150 leaflets, how much money will she earn that day?
Write your answer in pence (p) and then in pounds (£)

Revision: Using formulae

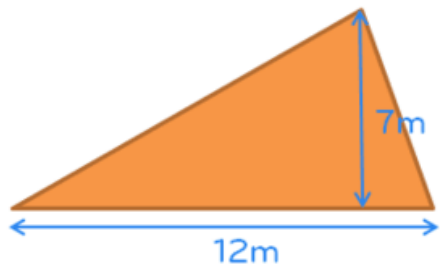
To find the area of any triangle we use the formula: $A = \frac{b \times h}{2}$

Where:

A = Area of the triangle

b = length of the base of the triangle

h = height of triangle



What is the area of this triangle?

Question 1



Complete

Julia bakes cupcakes and sells them in box. She uses this formula to work out how much to charge for one box of cupcakes.



Cost = number of cupcakes x 20p + 15p for the box

How much will a box of 12 cupcakes cost?

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

Question 2



Complete

$$n = 22$$

What is $2n + 9$?

$$2q + 4 = 100$$

Work out the value of q .

$q =$

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

Let's review:



I can create and understand formulae



I can use formulae to find an amount

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



CHALLENGE



Complete

Look at this expression:

$$10y + 2$$

When $y = 0.4$, the value of $10y + 2$ is an even number because $10 \times 0.4 + 2 = 6$

Now write a value for y so that $10y + 2$ is a square number.

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

Rules

$$2a = 2 \times a$$

$$ab = a \times b$$

$$cd = c \times d$$

$$\frac{a}{b} = a \div b$$

$$ab^2 = a \times b^2 = a \times b \times b$$

$$(ab)^2 = (a \times b)^2 = (a \times b) \times (a \times b)$$

Rules

Write equivalent expressions for:

1. $\frac{p}{r} =$

2. $4 \times g =$

3. $bca =$

Applying rules

When $a = 5$, $k = 6$, $t = 1$ and $d = 3$ find:

1. $a + k =$

$$\boxed{} + \boxed{} = \boxed{}$$

2. $k + d + t =$

$$\boxed{}$$

3. $ad =$

$$\boxed{} \boxed{} = \boxed{}$$

4. $= \frac{k}{d}$

$$\boxed{} \boxed{} \boxed{} = \boxed{}$$

5. $adt =$

$$\boxed{}$$

6. $\frac{a + k + t}{d} =$

$$\boxed{}$$

Writing Formulae

Example:

Write a formula for: the number of w wheels on b bicycles.

Answer: $w = 2b$

1. Write a formula to calculate:

a) Fish f needed to feed w whales if each whale eats 4 fish

b) Glasses g in y bottles if one bottle holds 8 glasses

Using formula

Exchange rates

£1 buys 1.1 Euros

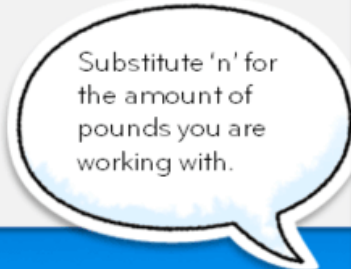
You can use the formula: $1.1n = \text{Amount of Euros}$ to work out how many euros you will get for your pounds.

$$1.1n = 1.1 \times n$$

So, for £10 pounds: $£10 = 1.1 \times 10 = 11 \text{ Euros}$

Use the above formula to work out how many euros you would get for

- a) £100
- b) £1000



Substitute 'n' for the amount of pounds you are working with.