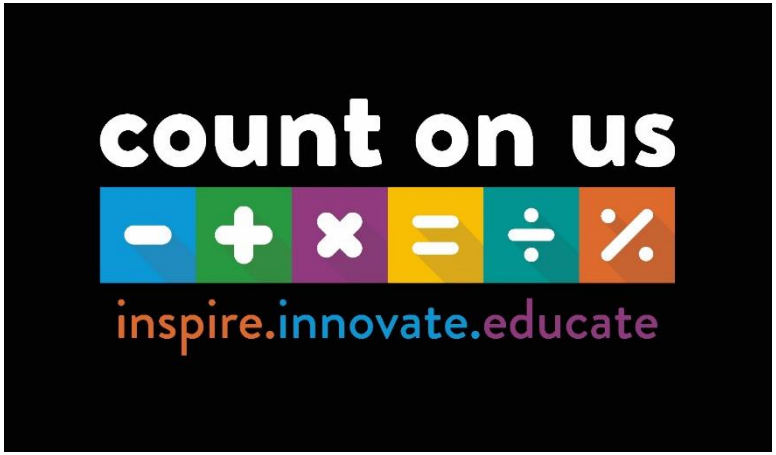


Learning Together Session 8

Thursday 25th June 10:00

Bar modelling and Problem Solving

#npfsmaths

Twitter : @CountOnUsEd

Slides and resources at
www.countonus.org.uk/learning-together/

#npfsmaths

YouTube

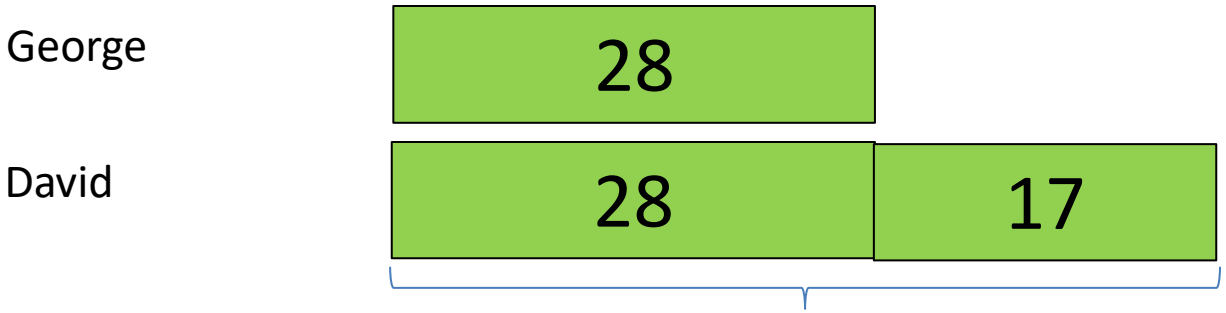
Follow us on Twitter and Facebook
@CountOnUsEd

Learning Together Session 8
Bar Modelling and Problem Solving:

count on us
inspire.innovate.educate

- Basic problems
- Ratio problems
- Puzzles

George has 28 pencils in his classroom.
David has 17 more pencils than George.
How many pencils does David have in his classroom?



28 + 17 = 45

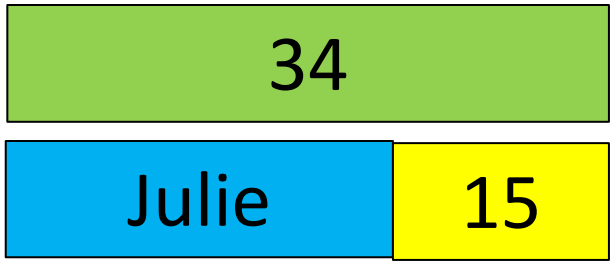
David has 45 pencils in his classroom.

Beatrice scored 34 points in a quiz. Julie scored 15 points less. How may points did Julie score?

$34 - 15 = 19$

Beatrice

Julie



Julie scored 19 points.

Gordon is given 1 box of chocolates
Claire is given 3 boxes of chocolates.
Draw a bar model to represent this

Gordon

Claire

Each box contains 10 chocolates.

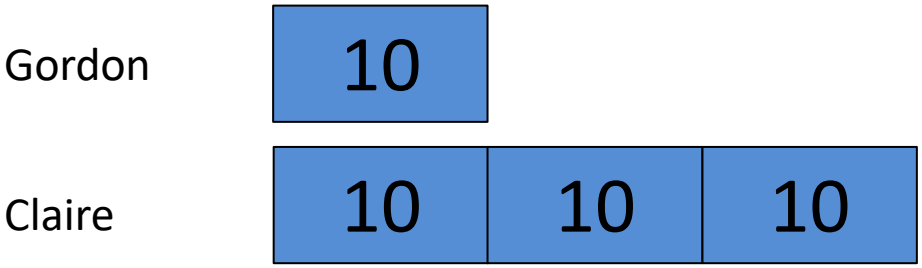
How many chocolates does Gordon and Claire get.

count on us
inspire.innovate.educate

Gordon is given 1 box of chocolates

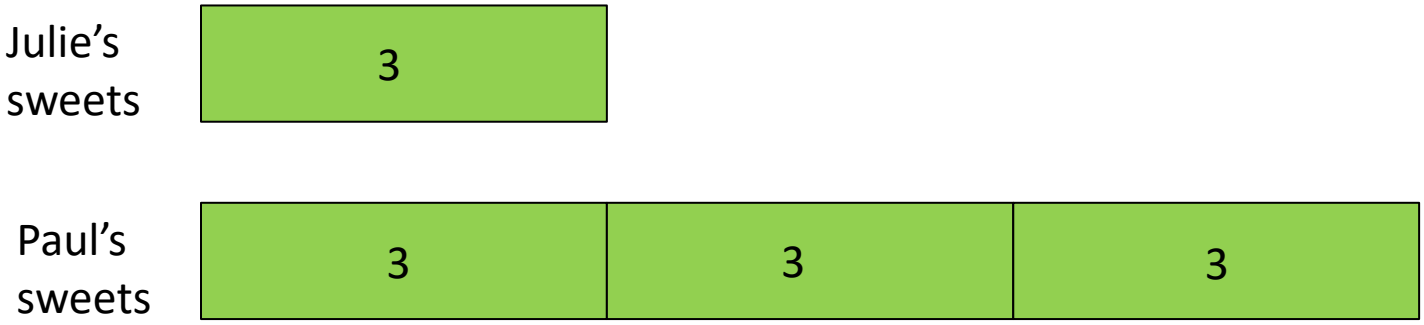
Claire is given 3 boxes of chocolates.

Draw a bar model to represent this



count on us
inspire.innovate.educate

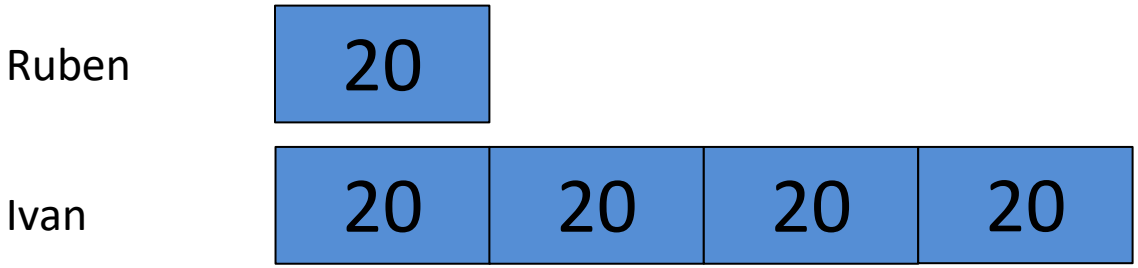
Paul and Julie have 12 sweets between them.
Paul has three times as many sweets as Julie.
How many sweets does Paul have?



$12 \div 4 = 3$

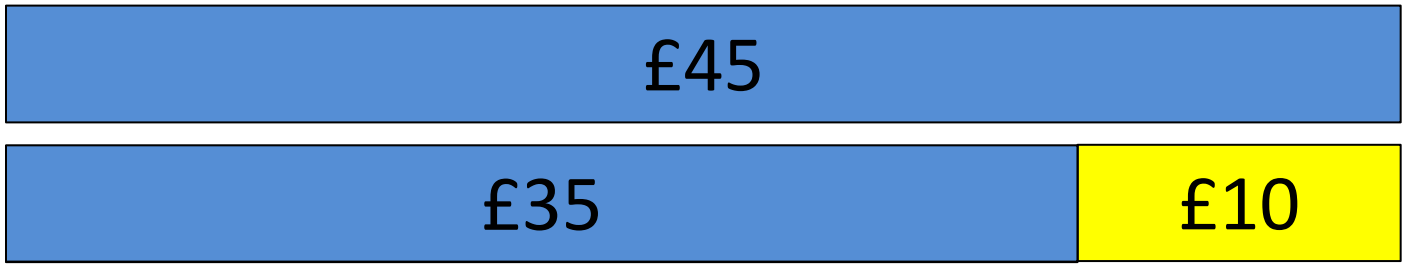
Paul has 9 sweets.

Ruben saves £20 for his summer holiday.
Ivan saves four times as much money for his holiday.
How much money does Ivan save for his holiday?



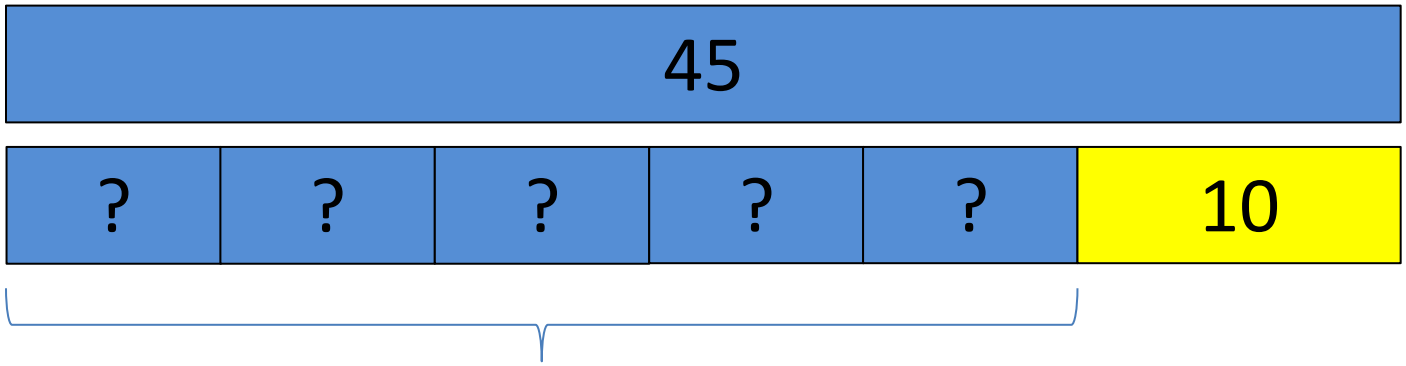
Ivan saves £80 for his holiday.

Robert has £45 to spend on football equipment.
He spends £10 on cones and then he buys 5 footballs with the rest. How much is one football?



£45 – £10 = £35

Robert has £45 to spend on football equipment. He spends £10 on cones and then he buys 5 footballs with the rest. How much is one football?



£35 divided by 5 = £7

One football costs £7

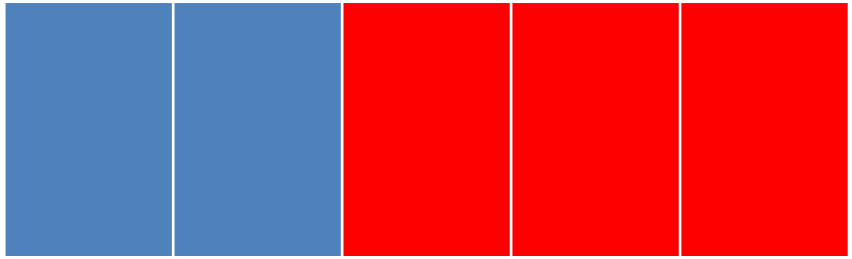
$\frac{3}{4}$ of 20

$\frac{3}{4}$ of 20

$= 5 \times 3$

$= 15$

Bar modelling and ratio



What is the ratio of blue to red?

BLUE : RED

2 : 3

RED : BLUE

3 : 2

Bar modelling and ratio

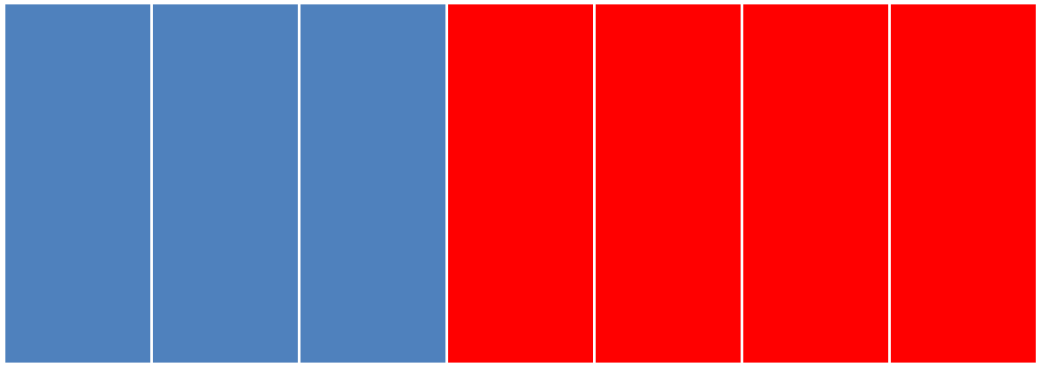
What is the ratio of blue to red?

BLUE : RED

5 : 2

RED : BLUE

2 : 5



Using a bar model to demonstrate a ratio of 3:4

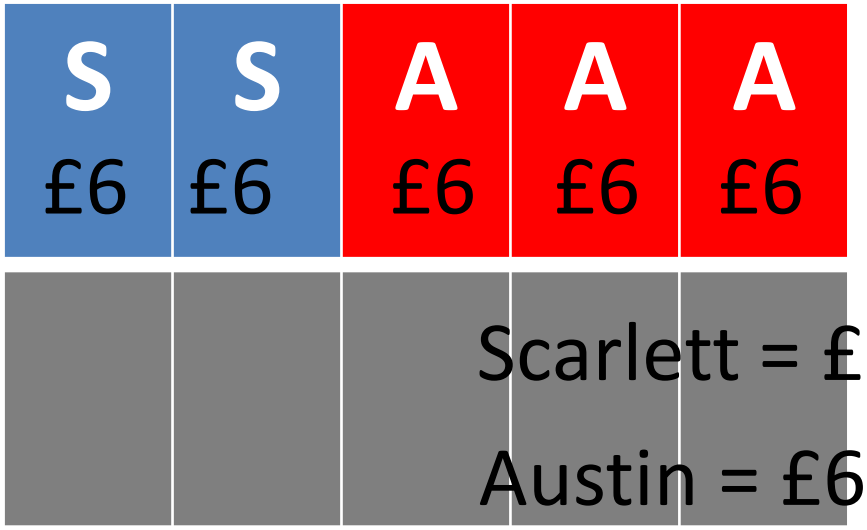
A	A	A	B	B	B	B

Scarlett and Anne clean out the garage for their parents

Scarlett does 2 hours work and Austin does 3 hours work.

They get paid £30 for this.

How much should they each get?



£30 ÷ 5 = £6

Scarlett = £6 x 2 = £12

Austin = £6 x 3 = £18

Robert and Anne share £32 in the ratio 3:5

Who gets more money and by how much?

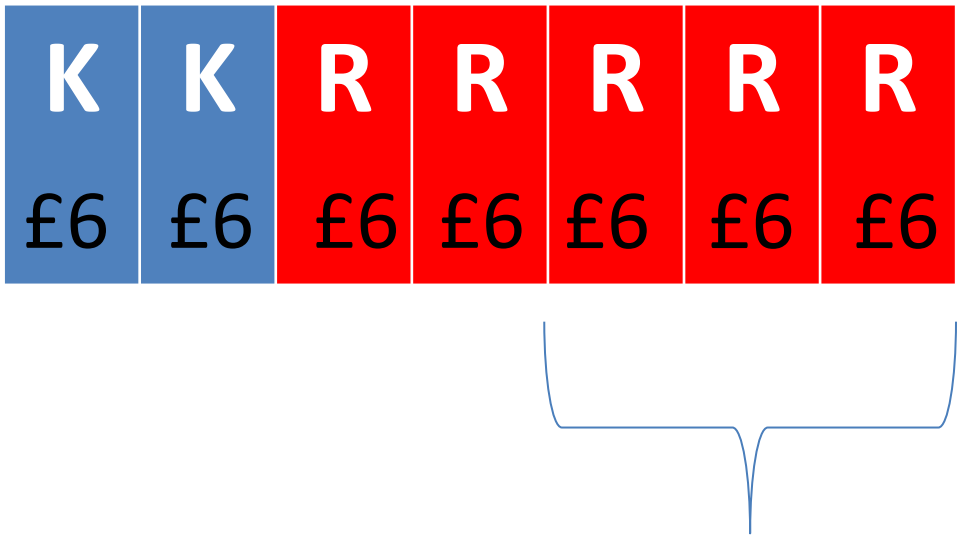
£32 ÷ 8 = £4

Robert = £4 x 3 = £12

Anne = £4 x 5 = £20

Kevin and Rose share some money in the ratio 2:5.
Rose gets £18 more than Kevin.
How much money did they share?

£6 x 7 = £42



£18 more

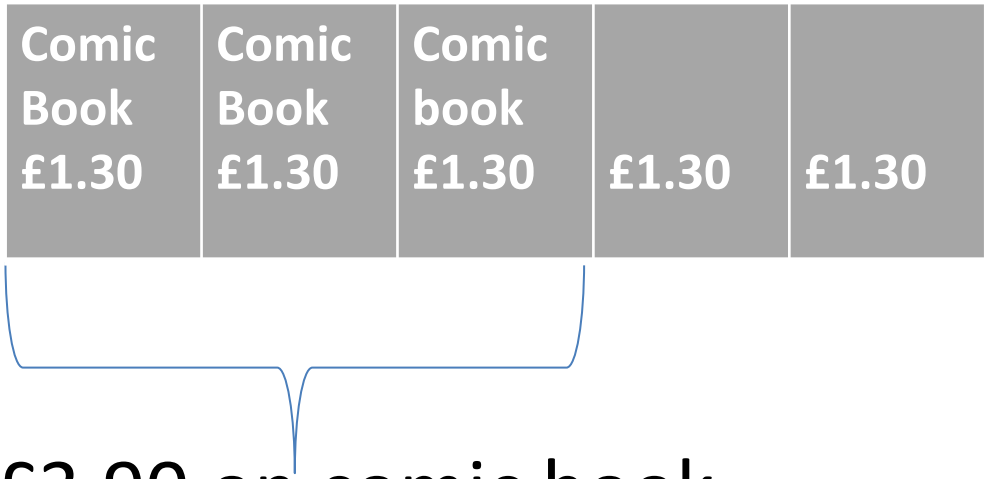
£18 ÷ 3 = £6

Claire spent $\frac{3}{5}$ of her pocket money on a comic book.

The comic book cost Claire £3.90

How much pocket money did Claire get?

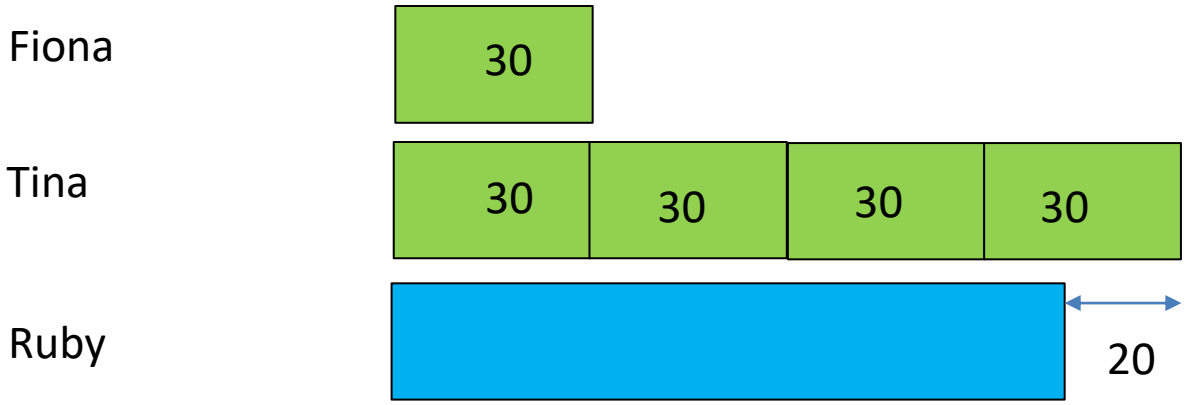
£1.30 x 5 = £6.50



£3.90 on comic book

£3.90 ÷ 3 = £1.30

Tina saves 4 times as much money as Fiona.
Ruby saves £20 less than Tina.
Fiona saves £30.
How much money does Ruby save?

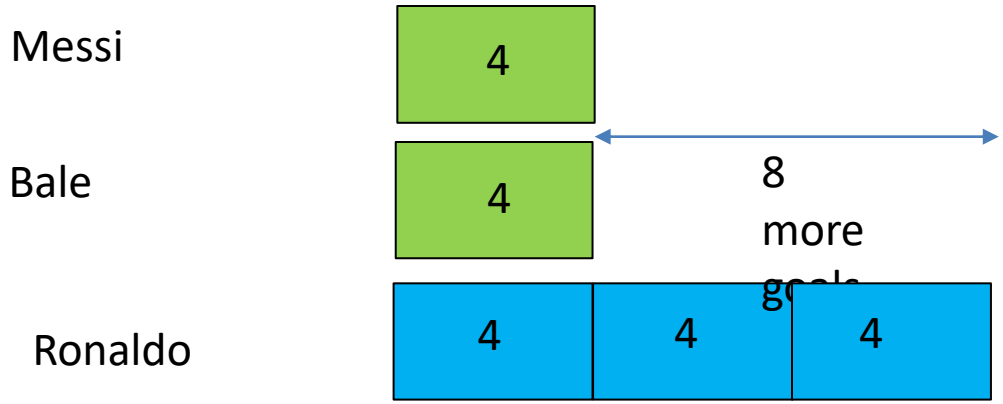


Tina saves £30 x 4 = £120

Ruby saves £120 - £20 = £100

Ruby saves £100.

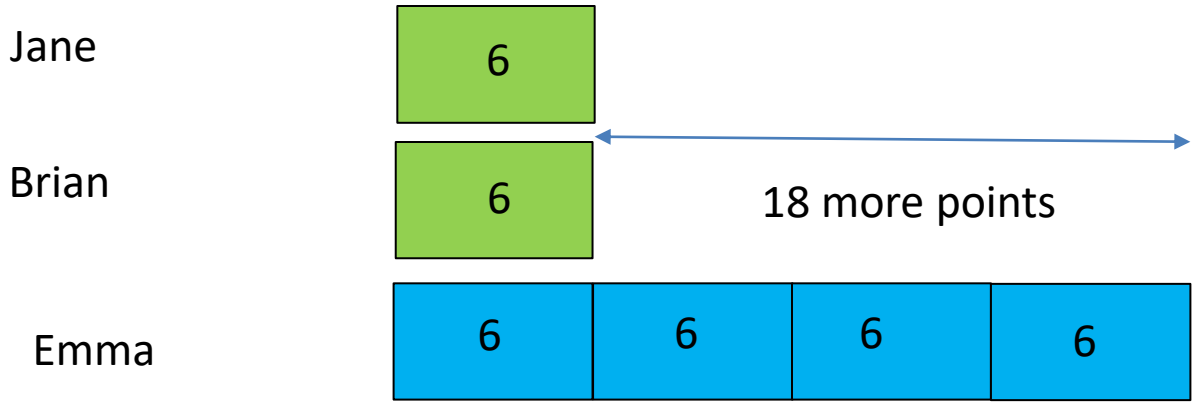
Messi, Ronaldo and Bale are playing in the CL.
Bale and Messi both score the same number of goals.
Ronaldo scores three times as many goals as Messi.
Ronaldo scored 8 more goals than Messi.
How many goals did they all score together?



Total goals = 4 + 4 + 4 + 4 + 4 = 20

They scored 20 goals altogether.

Jane, Emma and Brian are taking part in a dance competition
Jane and Brian both score the same number of points
Emma scores four times times as many points as Jane.
Emma scored 18 more points than Jane.
How many points did they all score?



Jane scored 6 points
Brian scored 6 points
Emma scored 24 points

$$\frac{1}{2} \times \frac{1}{3}$$

count on us
inspire.innovate.educate

Slides and resources at

www.countonus.org.uk/learning-together/

#npfsmaths

Slides and resources at
www.countonus.org.uk/learning-together/

#npfsmaths

YouTube

Follow us on Twitter and Facebook
@CountOnUsEd

the National Parent Forum of Scotland

count on us
inspire.innovate.educate

Thank You!

To help us continue to represent parents views, understand yours and your child's experiences of maths and numeracy, and to continue to improve the delivery of these sessions, we would appreciate your feedback.

https://www.surveymonkey.co.uk/r/learningtogetherfeedback

With support from Education Scotland and Scottish Government, building on themes emerging from the 'Making Maths Count' Group report

Education Scotland Foghlam Alba

MAKING MATHS COUNT

Scottish Government Riaghaltas na h-Alba gov.scot

Developing thinking skills

Problems that require perseverance

How many trailing zeros are there in the answer to 20**!**

What does 20**!** mean ?

20 x 19 x 18 x 17 x 16 x 15 x 14 x 13 x 12 x 11 x
10 x 9 x 8 x 7 x 6 x 5 x 4 x 3 x 2 x 1

What does ‘how many trailing zeros mean?’

300 has 2 trailing zeros
107 has **no** trailing zeros
230 has 1 trailing zero
15000 has 3 trailing zeros

What is 3 x 4 ?

What is 6 x 5 ?

What is 3 x 5 ?

What is 7 x 3 ?

What is 4 x 5 ?

What is 12 x 5 ?

What is 10 x 7 ?

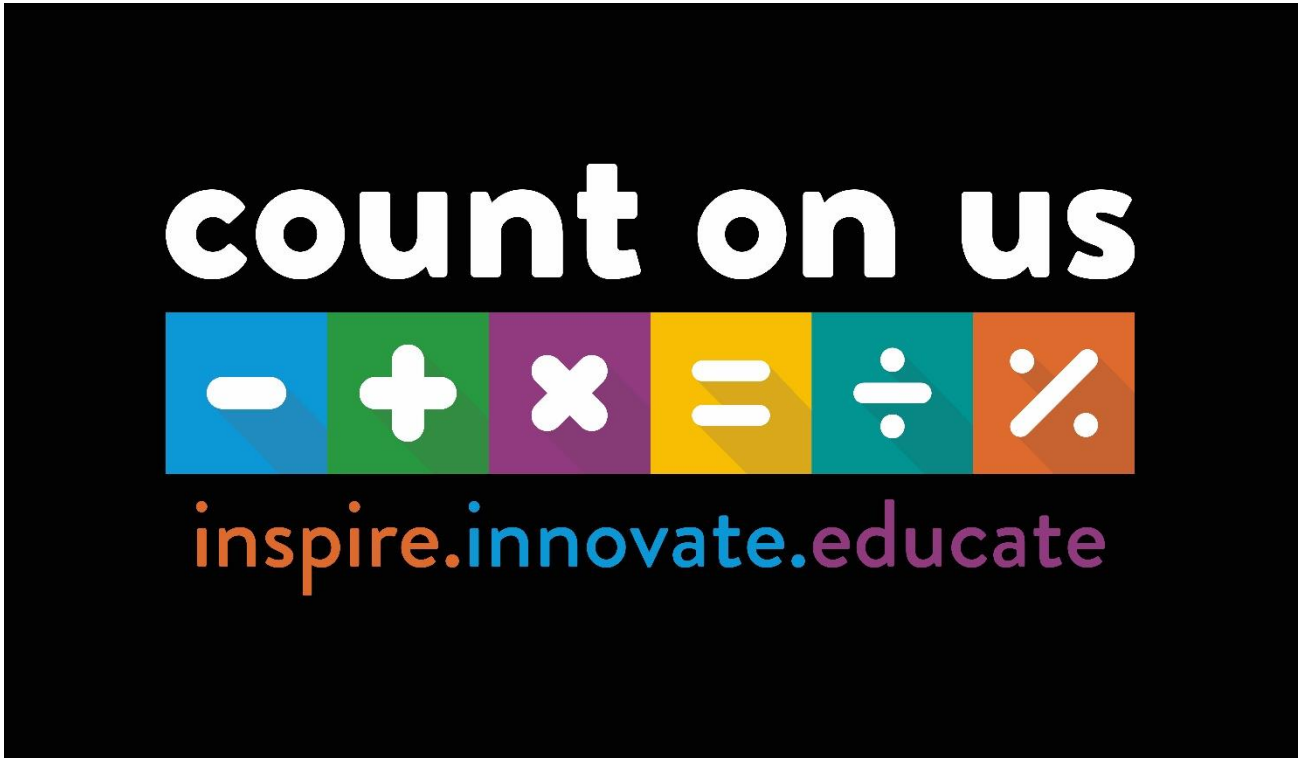
What is 10 x 8 ?

What do you notice?
What do you wonder?

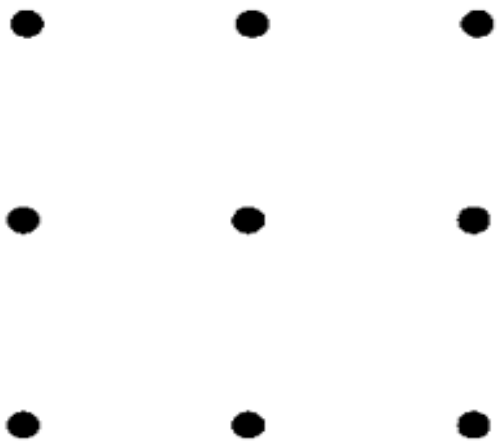
What calculations produce a trailing zero?

How many trailing zeros are there in the answer to 20**!**

20 x 19 x 18 x 17 x 16 x 15 x 14 x 13 x 12 x 11 x 10 x 9 x 8 x 7 x 6 x 5 x 4 x 3 x 2 x 1

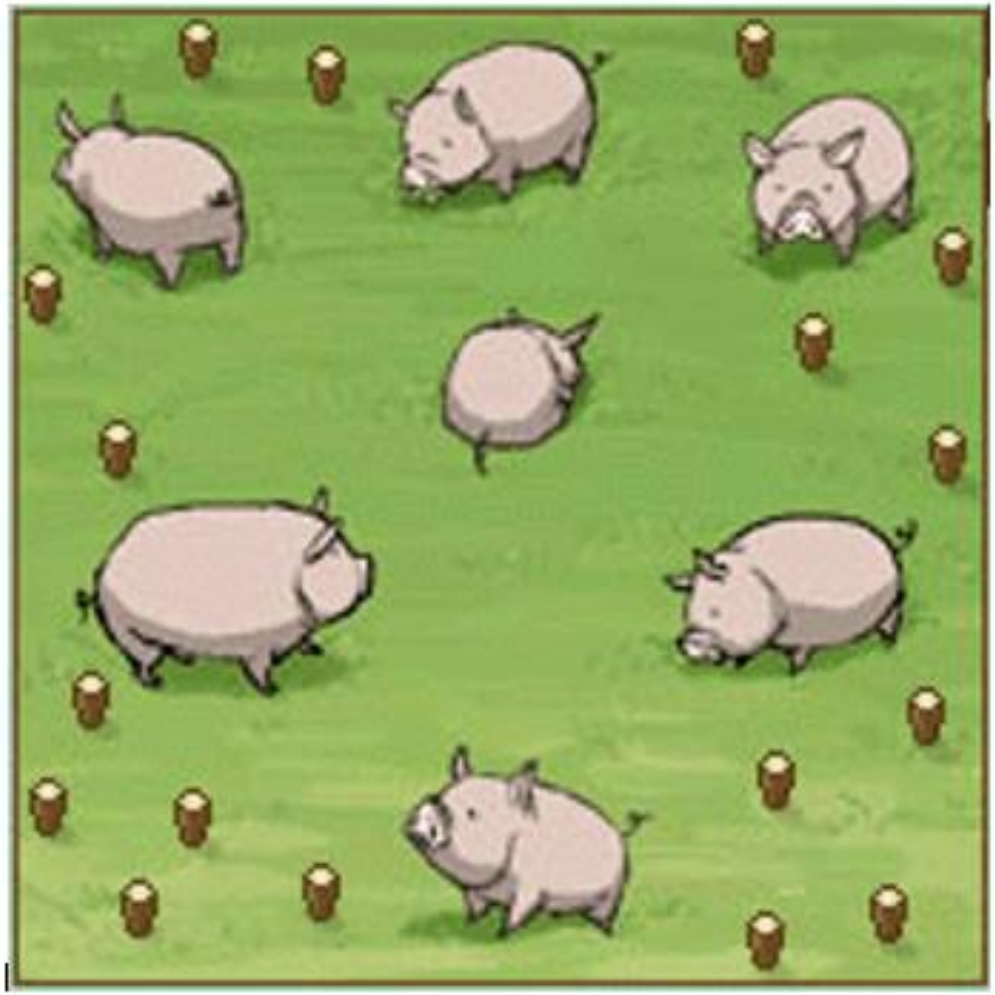


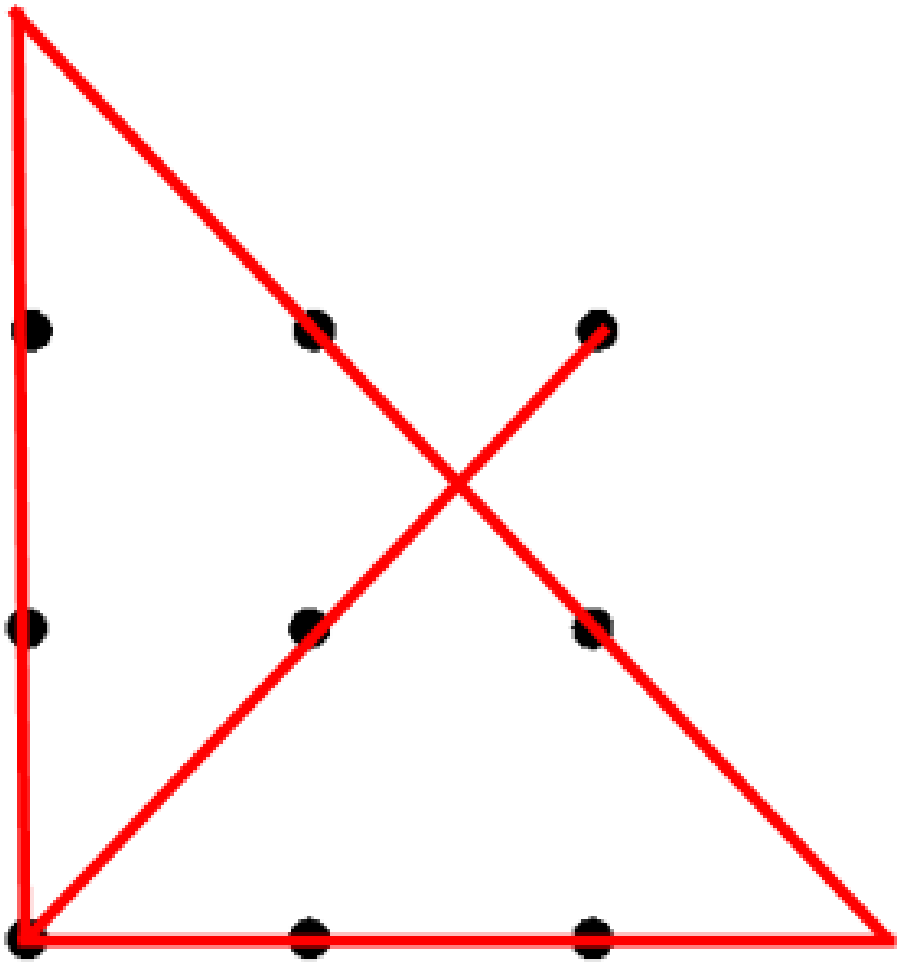
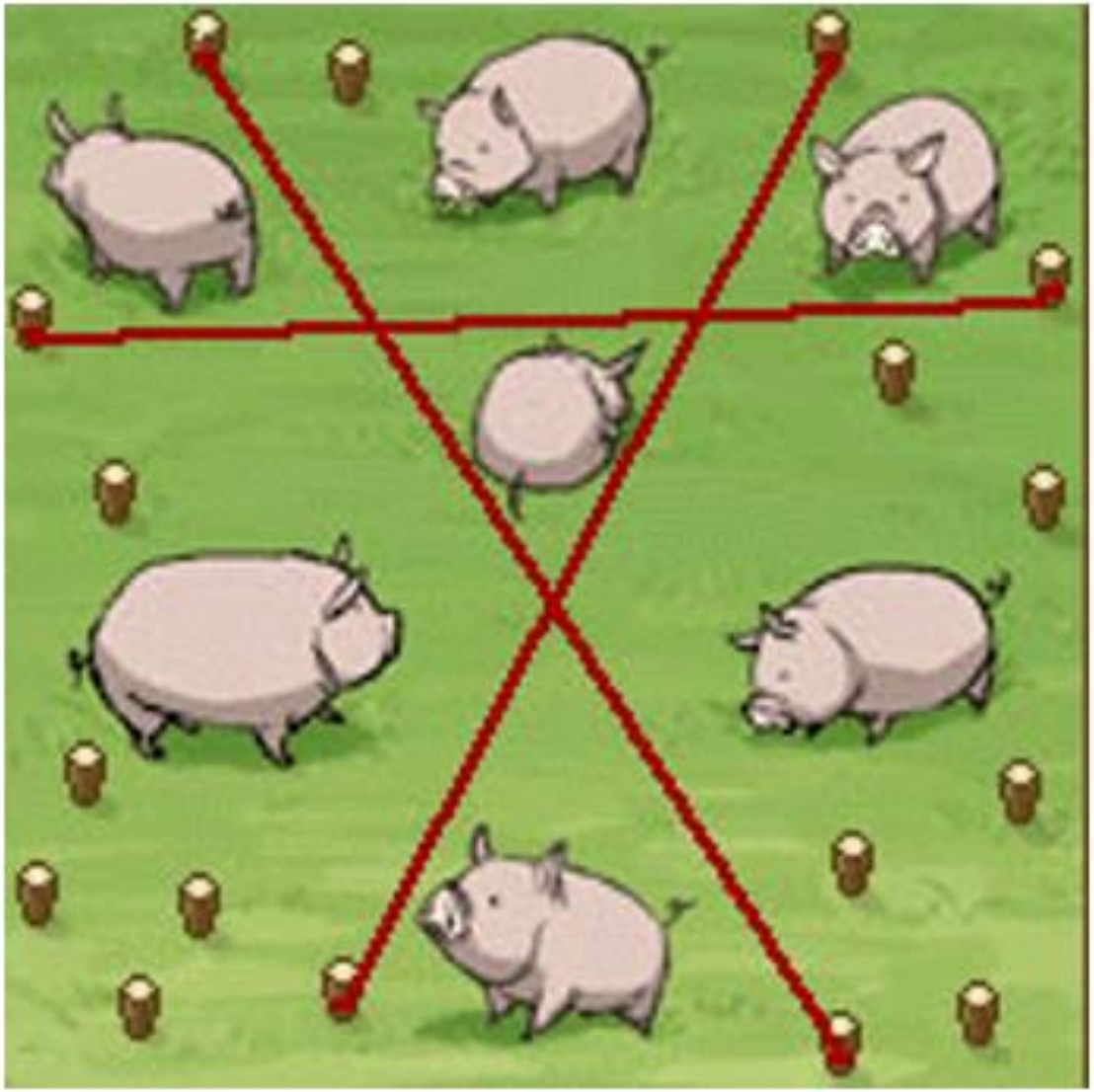
Twitter : @CountOnUsEd



Using 4 straight lines pass through all 9 dots.

Your pen cannot leave the paper and you cannot go back over a line, but lines can cross over



Using 3 separate ropes separate the 7 pigs into 7 different pens.

The ropes must be in a straight line.