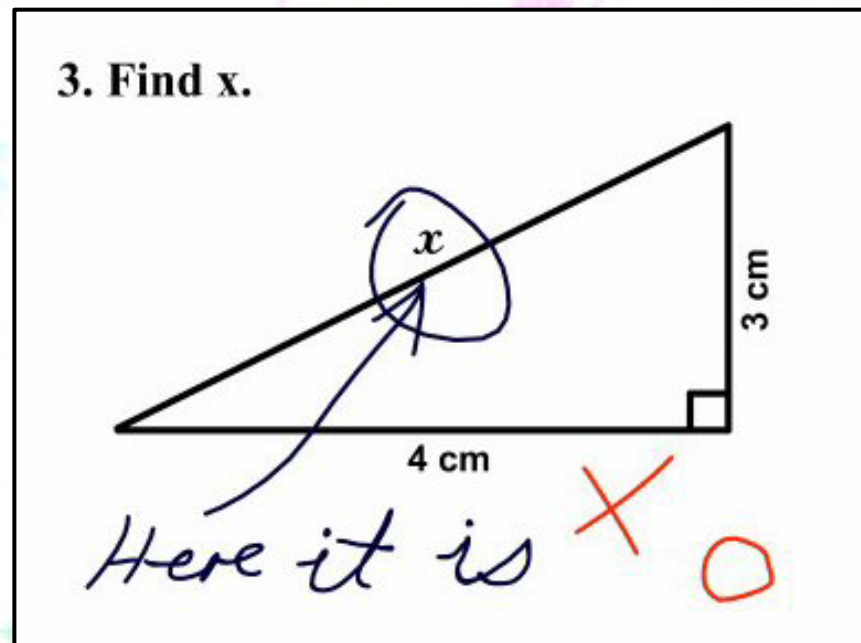
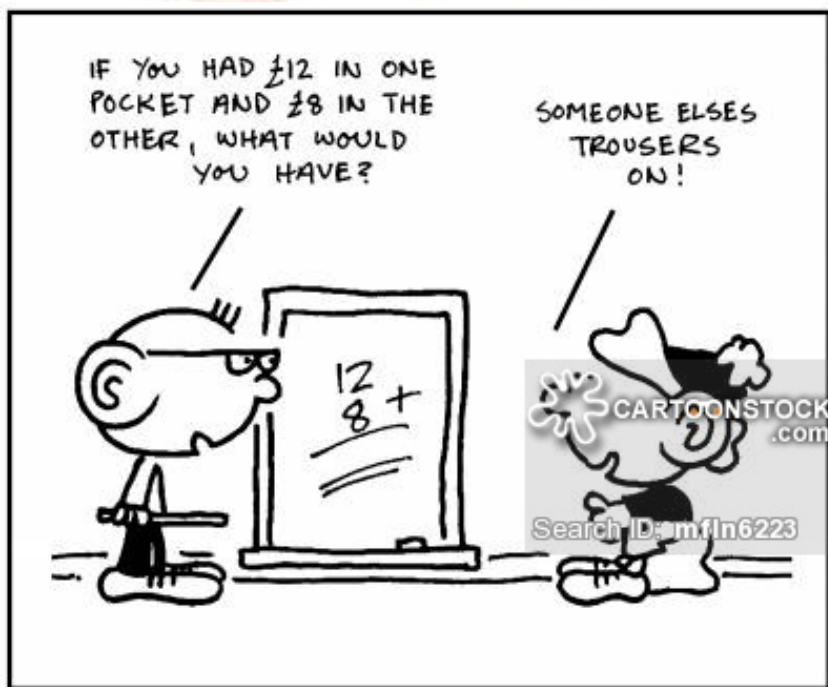


# MATHS INFORMATION EVENING



# A good mathematician.....

- \* Enjoys a challenge
- \* Can teach somebody else what they know
- \* Has a sharp recall of number facts
- \* Can use mathematical language
- \* Can calculate fluently
- \* Applies knowledge to other areas of maths/curriculum
- \* Perseveres with a problem
- \* Reasons logically
- \* Is willing to make mistakes
- \* Makes connections
- \* Asks questions
- \* Can see patterns and connections

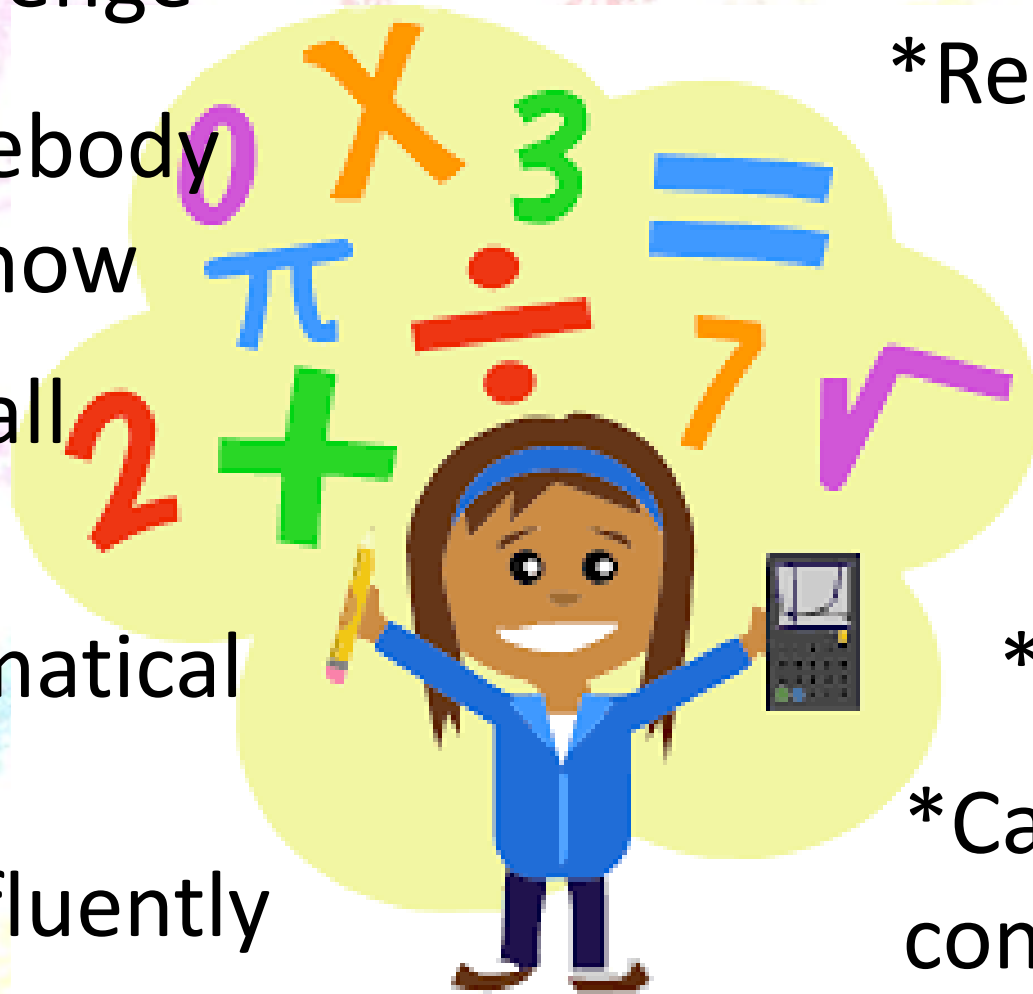
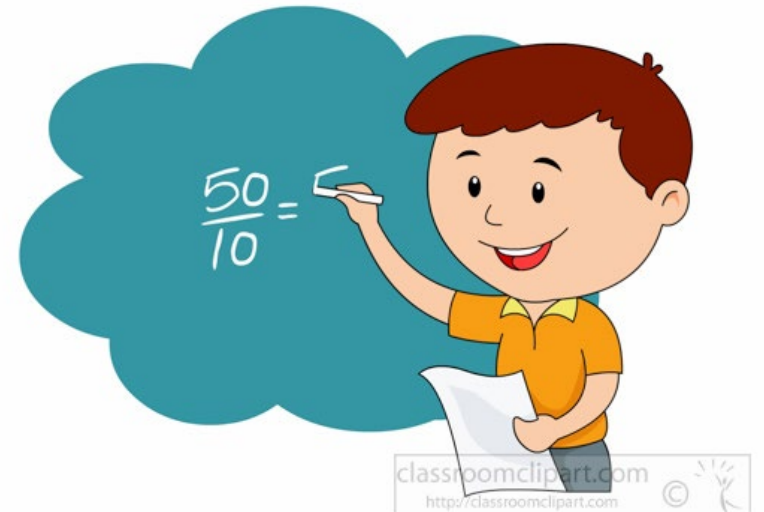




ILLUSTRATION BY STEPH BRAVO

## Mastery means:

- \* I know how to do it.
- \* It becomes automatic and I don't need to think about it.
- \* I do it confidently.
- \* I do it well. (Does "well" mean "quickly"? Sometimes not always!)
- \* I can do it in a new way, or in a new situation.
- \* I can now do it better than I used to.
- \* I can show someone else how to do it.
- \* I can explain to someone else how to do it



# Children need to....

- Be fluent
- Have opportunities to reason
- Have opportunities to solve problems

*Apple*

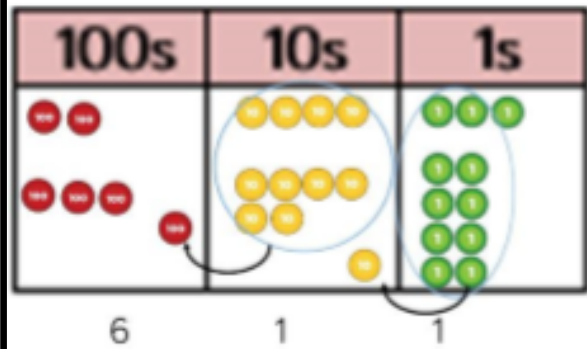


# Concrete Pictorial Abstract Method



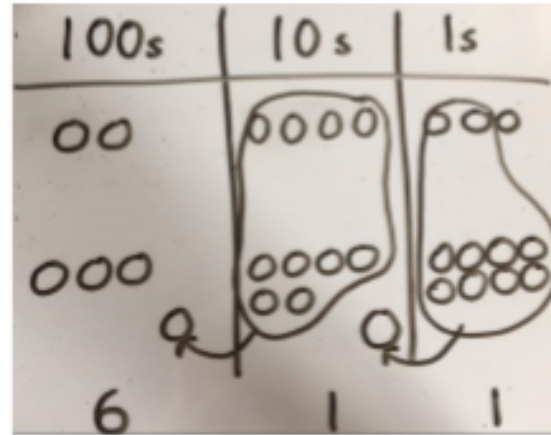
# CONCRETE

Use of place value counters to add HTO + TO, HTO + HTO etc. When there are 10 ones in the 1s column- we exchange for 1 ten, when there are 10 tens in the 10s column- we exchange for 1 hundred.



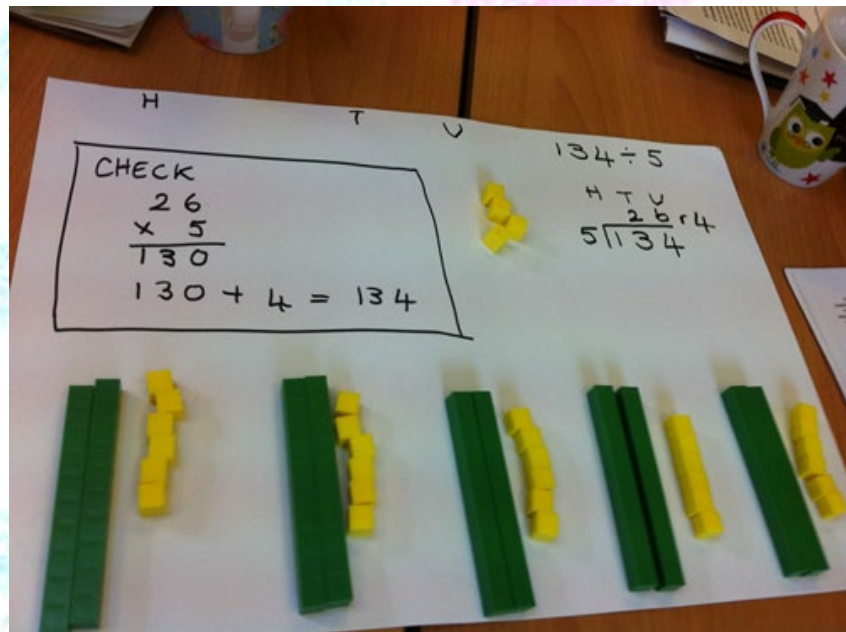
# PICTORAL

Children to represent the counters in a place value chart, circling when they make an exchange.




# ABSTRACT


$$\begin{array}{r} 243 \\ +368 \\ \hline 611 \\ \hline 11 \end{array}$$




### Manipulatives




Bead strings




Cuisenaire Rods




Numicon



Dienes



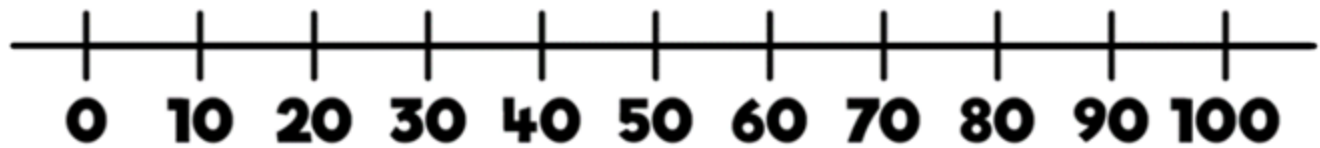
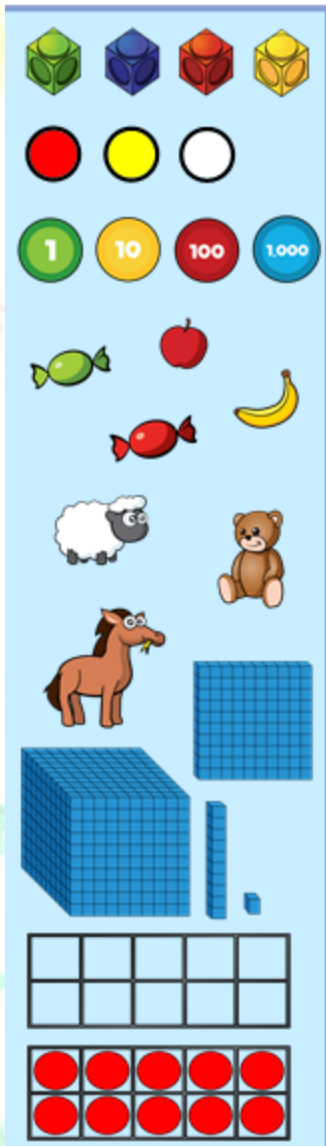
Place value counters



Place value arrow cards

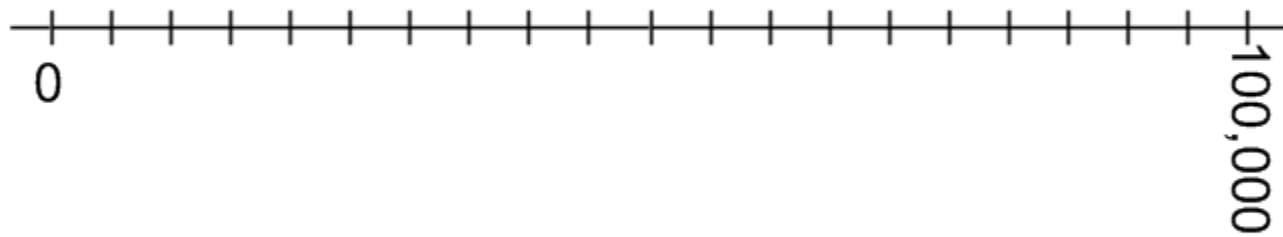


# Number Line



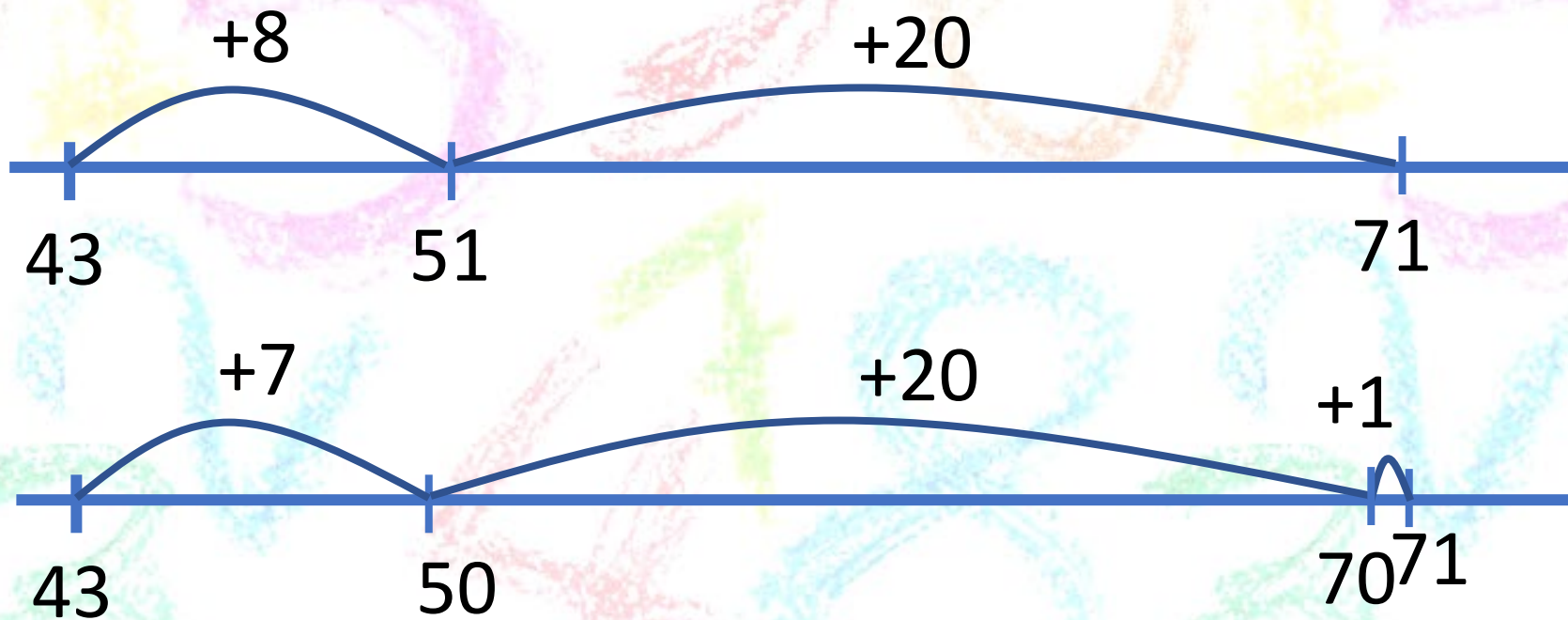
# Number Line

A vertical panel containing various icons for a number line activity. From top to bottom: four colored cubes (green, blue, red, yellow); three circles (red, yellow, white); four circles labeled '1', '10', '100', and '1,000'; three circles labeled '10,000', '100,000', and '1,000,000'; a banana and an apple; two wrapped candies (red and green); a large blue cube, a smaller blue cube, and a small blue cube; a 2x5 grid of empty boxes; and a 2x5 grid of red circles.



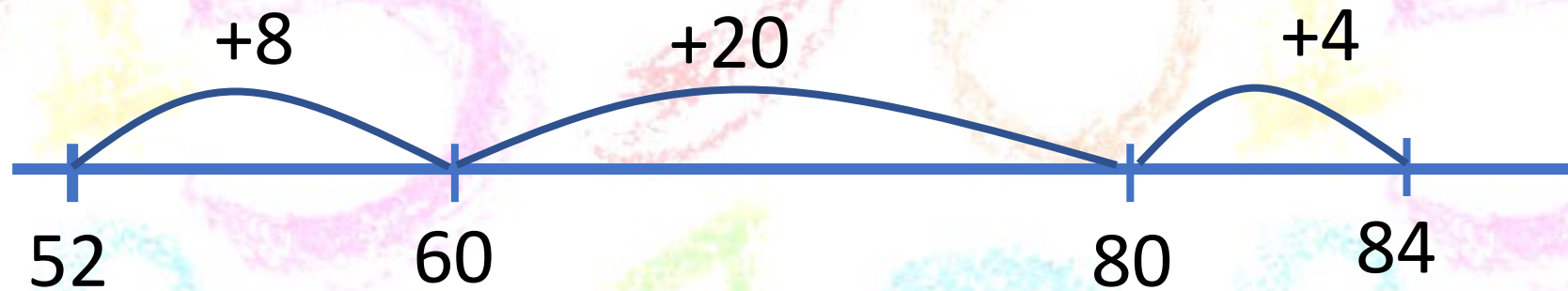
# Addition on a number line

$$43 + 28$$



# Subtraction on a number line

$$84 - 52$$



$$8 + 20 + 4 = 32$$

# Written Addition

$$43 + 28$$

$$43 \text{ is } 40 + 3$$

$$28 \text{ is } 20 + 8$$

$$3 + 8 = 11$$

$$40 + 20 = 60$$

$$= 71$$



$$\begin{array}{r} 40 + 3 \\ + 20 + 8 \\ \hline 60 + 11 = 71 \\ \hline \end{array}$$



$$\begin{array}{r} 43 \\ + 28 \\ \hline 71 \\ \hline 1 \end{array}$$

$$4.893 + 2$$

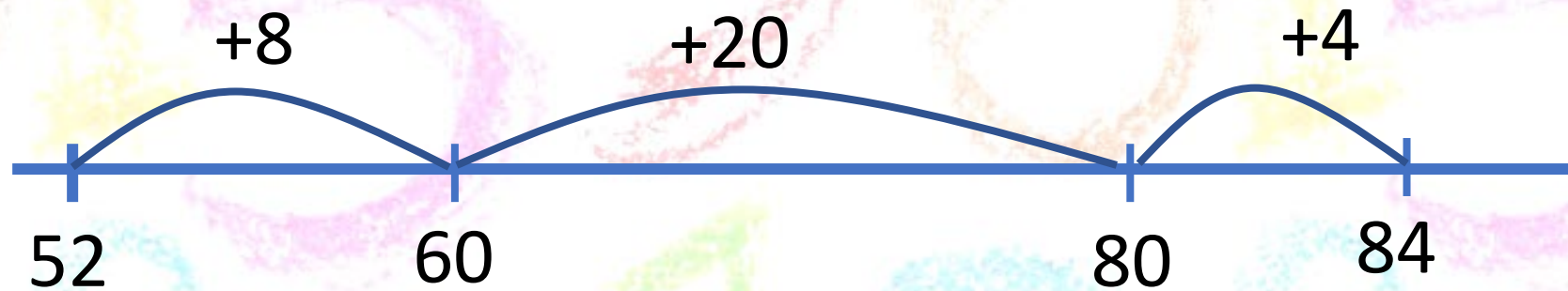
$$\begin{array}{r} 4.893 \\ + 2.000 \\ \hline 6.893 \\ \hline \end{array}$$

$$£78.23 + £9.99$$

$$\begin{array}{r} £ 78.23 \\ + £ 9.99 \\ \hline £ 88.22 \\ \hline \end{array}$$

# Subtraction on a number line

$$84 - 52$$



$$8 + 20 + 4 = 32$$

# Written Subtraction

$$84 - 52$$

$$84 \text{ is } 80 + 4$$

$$52 \text{ is } 50 + 2$$

$$4 - 2 = 2$$

$$80 - 50 = 30$$

$$= 32$$



$$\begin{array}{r} 80 + 4 \\ - 50 + 2 \\ \hline \end{array}$$

$$\underline{30 + 2} = 32$$



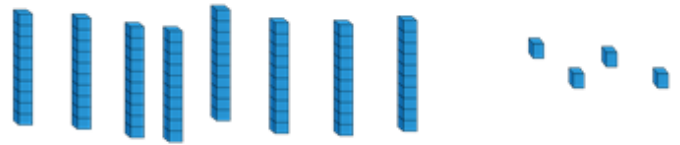
$$\begin{array}{r} 84 \\ - 52 \\ \hline 32 \end{array}$$

84 - 29



# Make a Number

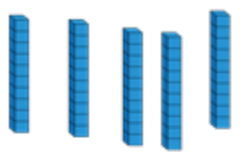
A vertical menu of icons for a number-making game. The icons include: four colored cubes (green, blue, red, yellow); three colored circles (red, yellow, white); four circles with numbers (1, 10, 100, 1,000); three circles with large numbers (10,000, 100,000, 1,000,000); a banana and an apple; two wrapped candies (red and green); a large blue grid cube, a smaller blue grid cube, a blue grid bar, and a few blue grid squares; and a 2x5 grid of empty squares at the bottom.



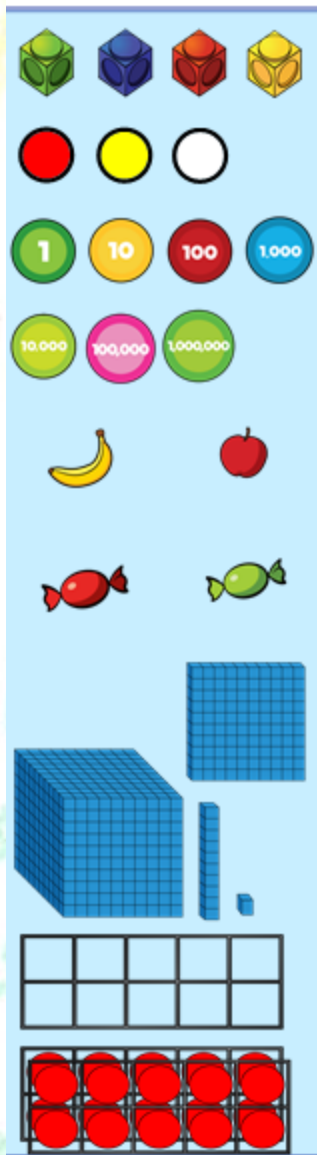


# Make a Number

A vertical toolbar containing various mathematical and numerical icons for a game. From top to bottom, the icons are: four colorful dice (green, purple, red, yellow); three circles (red, yellow, white); four circles labeled '1', '10', '100', and '1,000'; three circles labeled '10,000', '100,000', and '1,000,000'; a banana and an apple; two wrapped candies (red and green); a large blue cube, a smaller blue cube, a blue rod, and a small blue cube; a 2x5 grid of empty squares; and a row of five red circles.

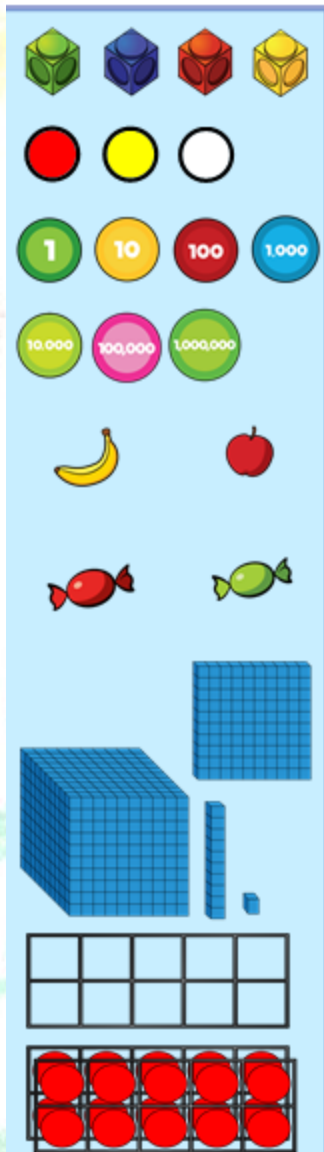


# Place Value Grid



Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones
					10 10 10 10 10 10	1 1 1 1

# Place Value Grid



Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones
					10 10 10 10 10 10 10	1 1 1 1 1 1 1 1 1 1 1 1 1 1

# Written Subtraction - Decomposition

$$84 - 29$$

$$\begin{array}{r} \cancel{7}84 \\ - 29 \\ \hline 55 \end{array}$$



# Multiplication methods

## Partitioning

$$32 \times 3$$

32 is  $30 + 2$

So  $30 \times 3$

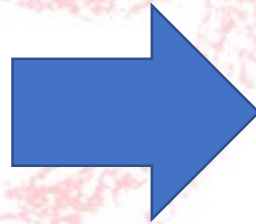
Add  $2 \times 3$

Is the same as  $32 \times 3$

$$30 \times 3 = 90$$

$$2 \times 3 = 6$$

$$\text{So } 32 \times 3 = 96$$



## Expanded method

$$\begin{array}{r} 32 \\ \times 3 \\ \hline 6 \\ 90 \\ \hline 96 \end{array}$$

( $2 \times 3$ )  
( $30 \times 3$ )



## Formal method

$$\begin{array}{r} 32 \\ \times 3 \\ \hline 96 \end{array}$$

# Multiplication methods

$$32 \times 47$$

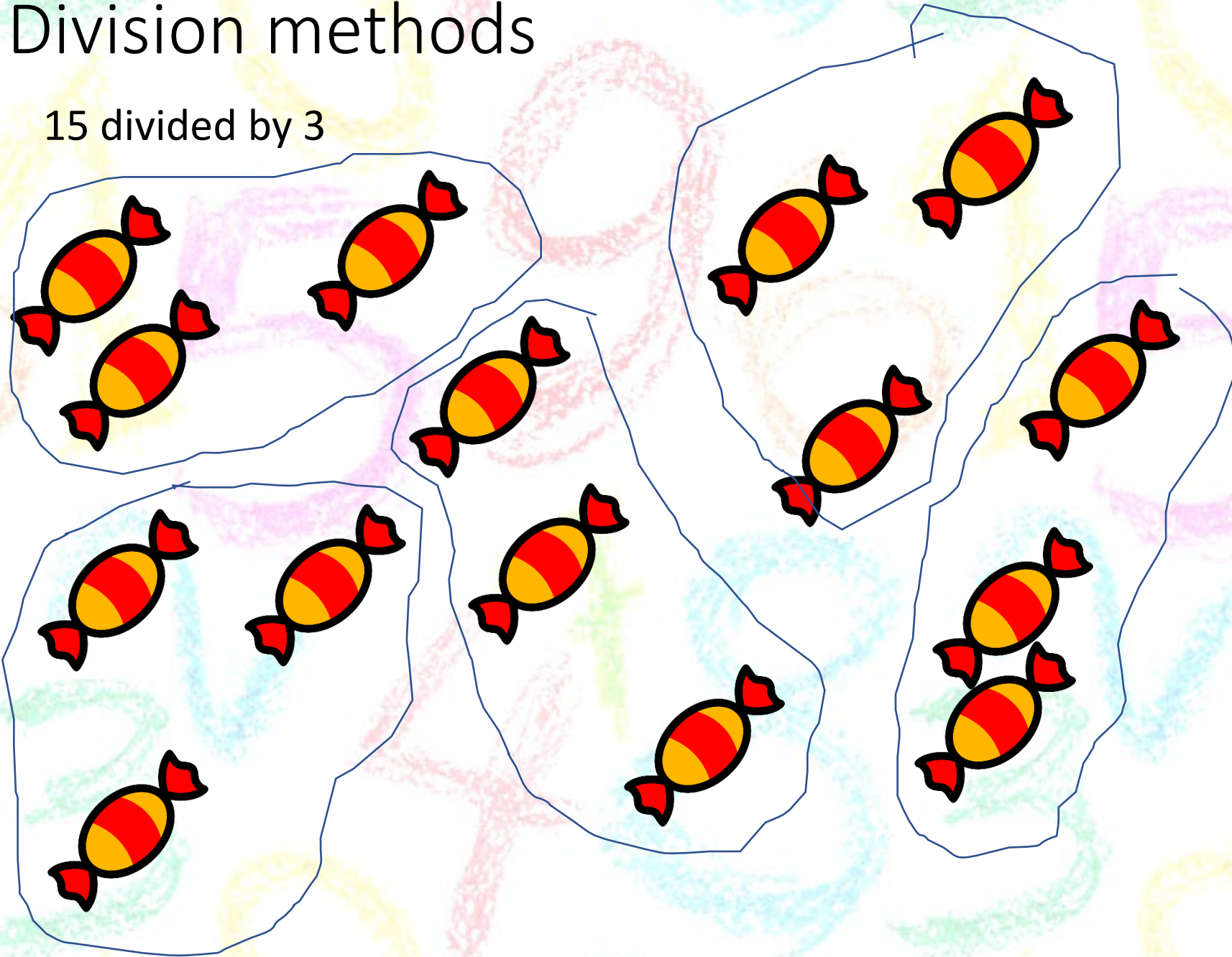
$$\begin{array}{r} 32 \\ \times 47 \\ \hline 224 \\ 1280 \\ \hline 1504 \end{array}$$

$$32 \times 7$$

$$32 \times 40$$

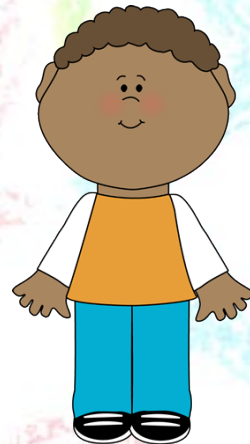
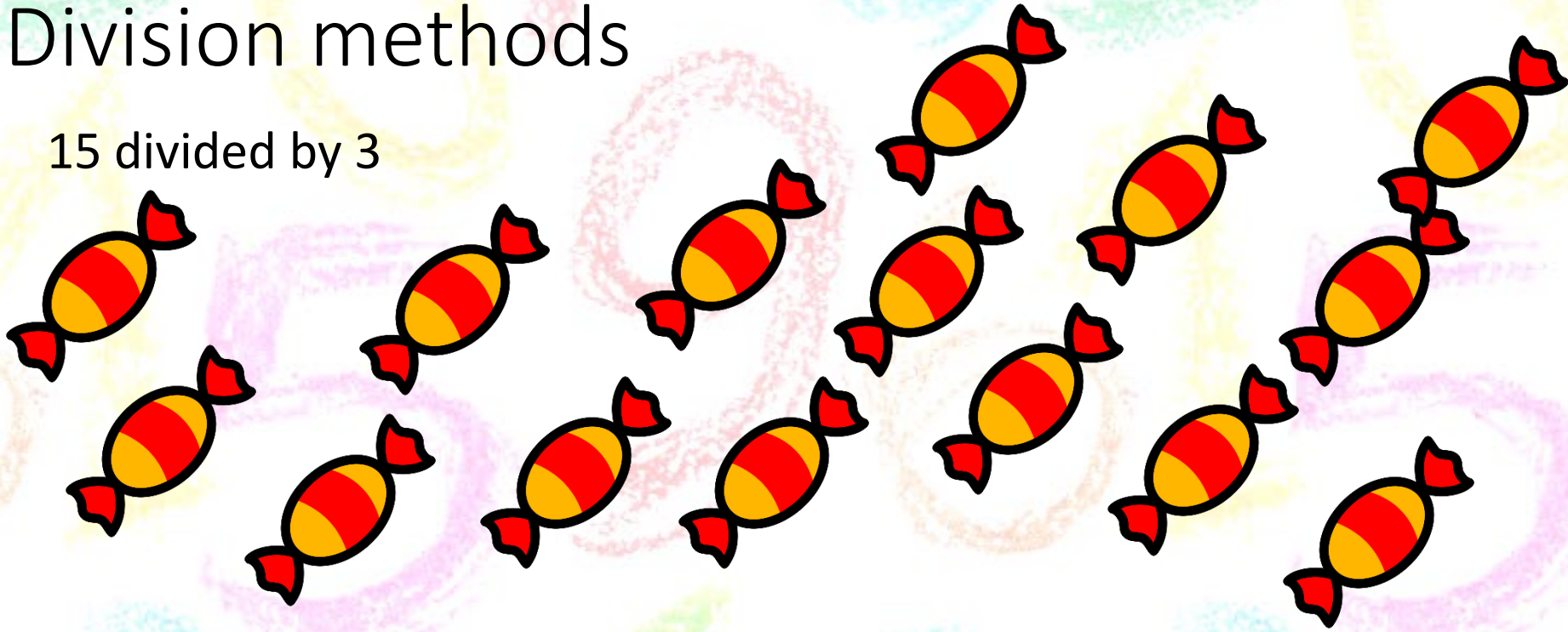
# Division methods

15 divided by 3



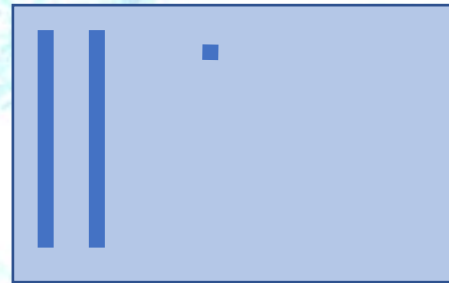
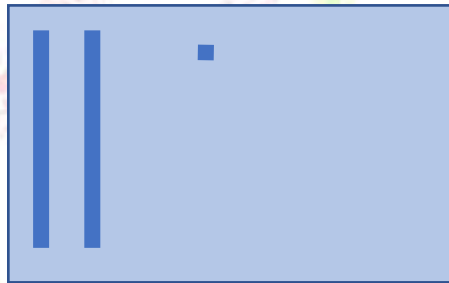
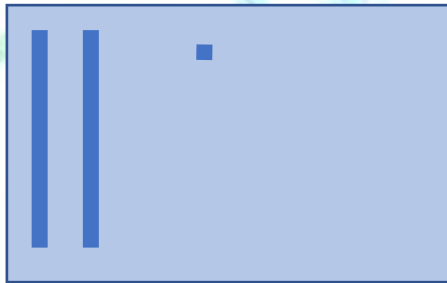
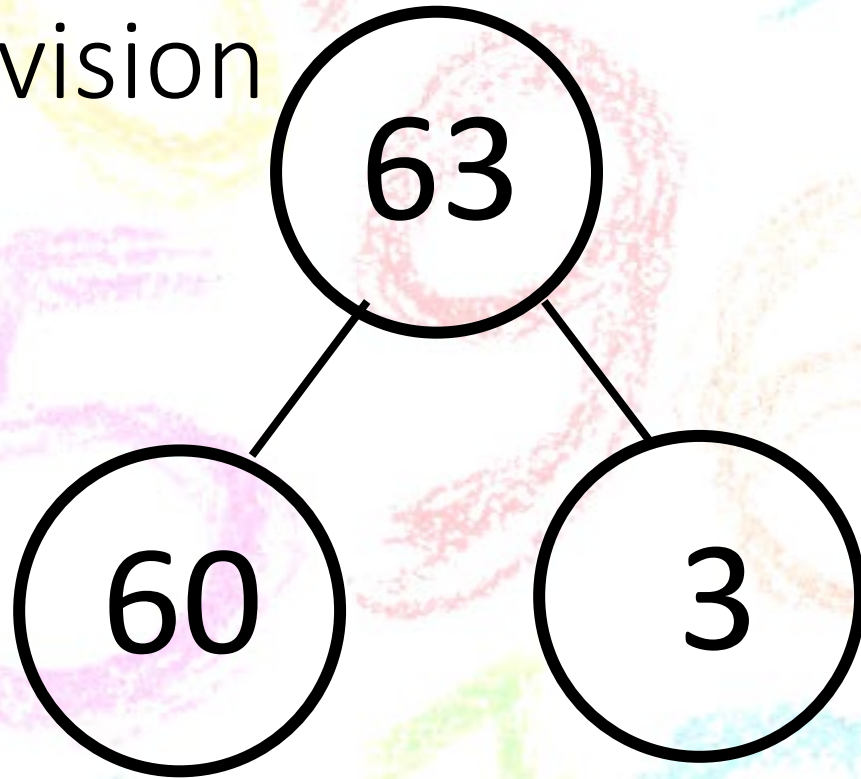
# Division methods

15 divided by 3



# Written Division

$$63 \div 3$$



# Written Division

$$78 \div 5$$

$$\begin{array}{r} 15 \\ 5 \overline{) 78} \end{array}$$

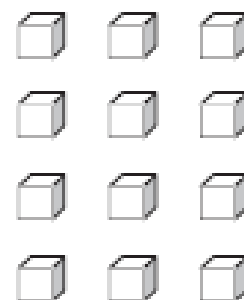
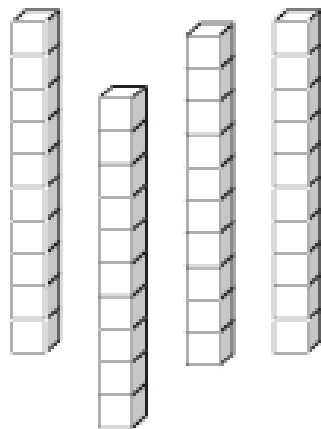
Remainder: 3

# Children need to....

- Be fluent
- Have opportunities to reason
- Have opportunities to solve problems

13

Beth makes a number.



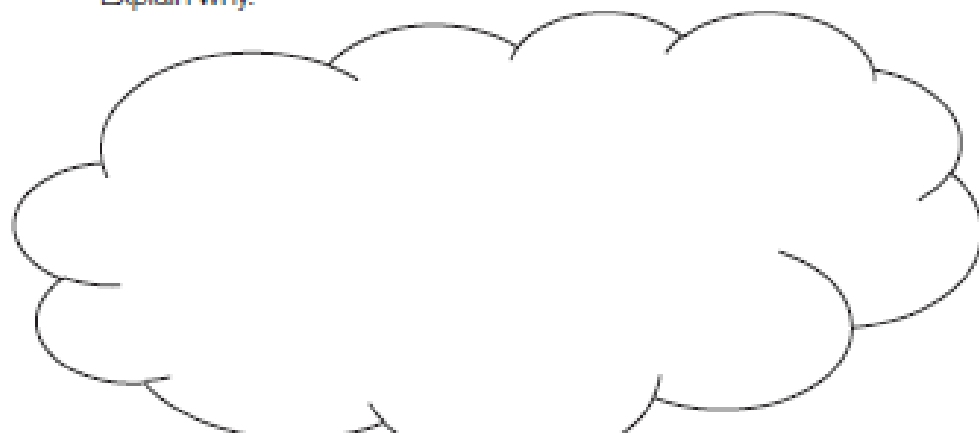
Beth thinks she has made 412

Do you agree?

Yes

No

Explain why.



# Half Time



When Spain played Belgium in the preliminary round of the men's hockey competition in the 2020 Olympics, the final score was 4–2.

4 2

What could the half time score have been?  
Can you find all the possible half time scores?  
How will you make sure you don't miss any out?

In the final of the men's hockey in the 2016 Olympics, the Netherlands played Korea. The final score was a draw; 3–3 and they had to take penalties.

3 3

Can you find all the possible half time scores for this match?



# Three coins

1. Make an amount of money between £1 and £2 using exactly three coins.  
You can use a coin more than once.
2. How many different amounts between £1 and £2 can be made using EXACTLY three coins?
3. What is the smallest amount that you can make?  
And the largest amount?  
  
Can you be certain that you have them all?  
  
Do you think you would be able to make more or fewer amounts between £3 and £4? Why?

$$£1 + 10p + 10p = £1.20$$

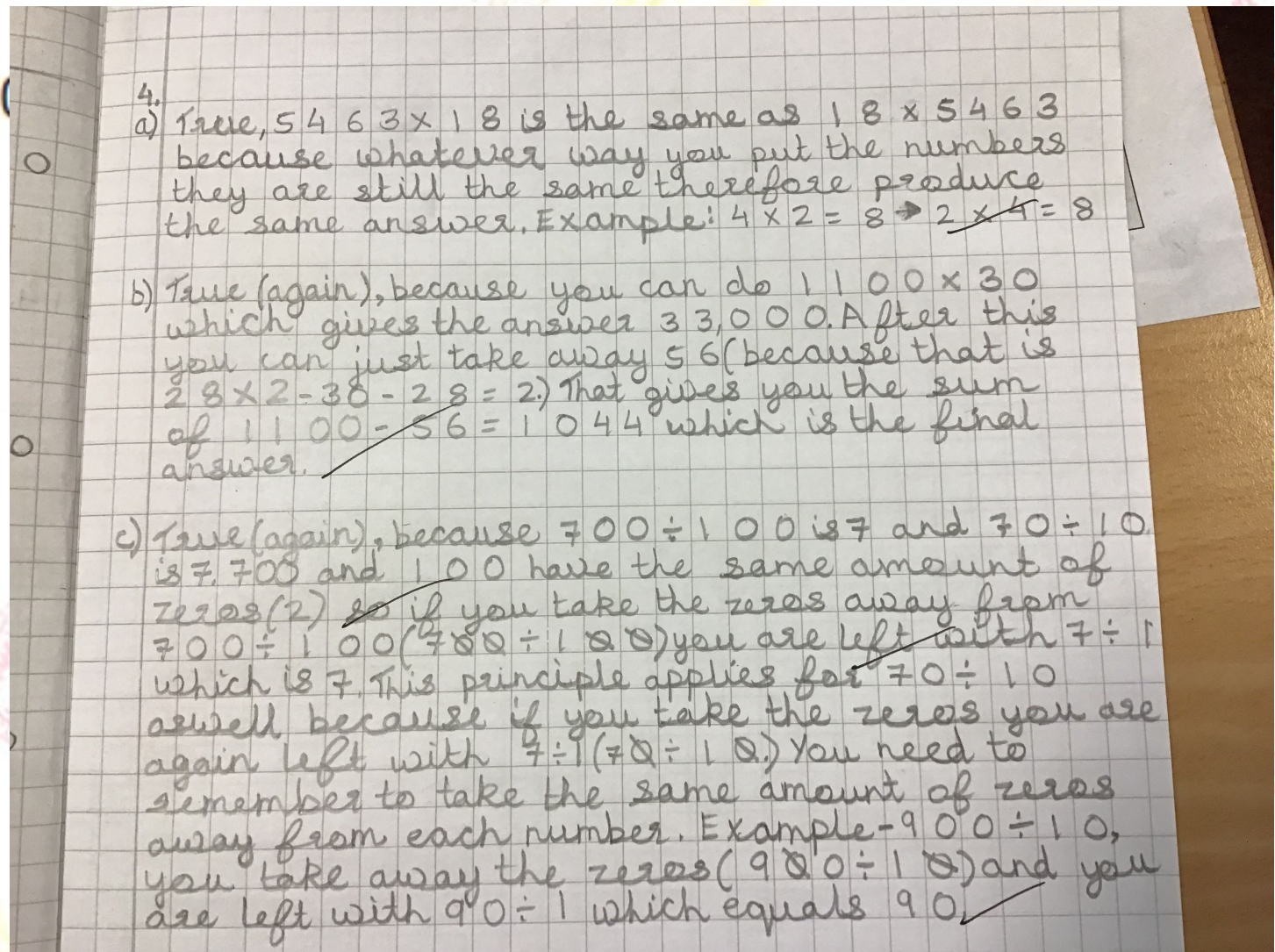


4. True or false.

a)  $5,463 \times 18$  is the same as  $18 \times 5,463$

b) I can find the answer to  $1,100 \times 30$  using  $1,100 \times 30$

c)  $70 \div 10 = 700 \div 100$





# TOP TIPS!

1.HELP WITH HOMEWORK

2.INVOLVE CHILDREN IN EVERYDAY MATHS

3.HAVE A POSITIVE ATTITUDE

4.HELP TO LEARN FACTS

