White Rose Maths

Year 2

Addition & Subtraction

Here is an incomplete bar model.

The total is greater than 10 but less than 20

What could the missing numbers be?

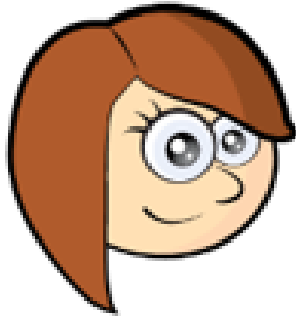How many different combinations can you find?

$$8 - 5 = 3$$

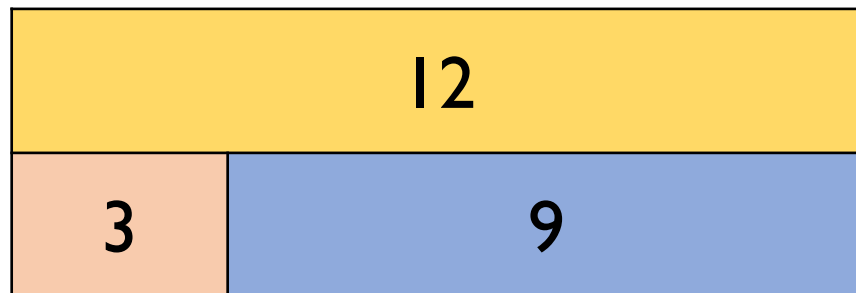$$8 - 3 = 5$$

$$8 = 5 - 3$$

$$3 = 8 - 5$$

Rosie says,

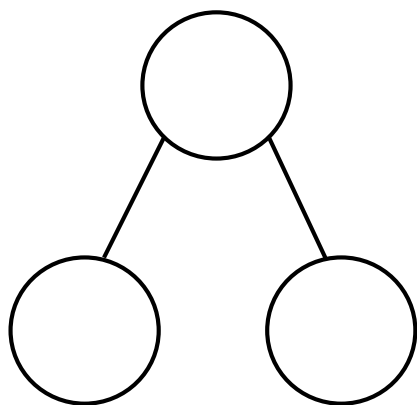I think that all of these facts are correct because the numbers are related

Ron disagrees.
Who is correct? Can you prove it?

Which of the representations are equivalent to the bar model?

$$12 = 9 + 3$$

There are 9 cars in a car park, 3 cars leave.

$$9 - 3 = 12$$

Eva did the following calculation:

$$12 - 8 = 4$$

She checked it by using the inverse.

She did $12 + 8 = 20$ and said that her first calculation was wrong.

What advice would you give her?

Teddy is checking Dora's work but doesn't do an inverse calculation.
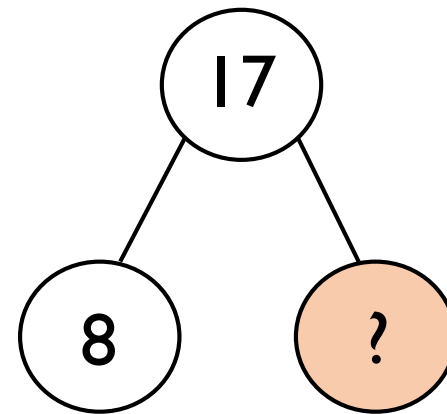
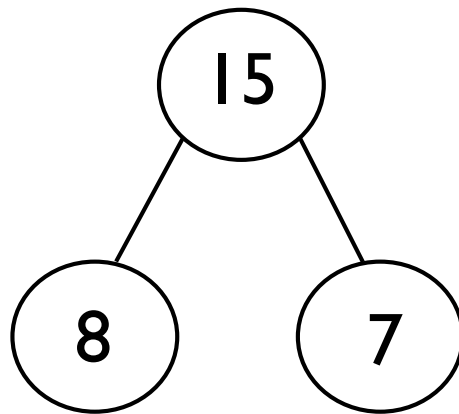These calculations can't be right.

$$24 + 6 = 84$$

$$25 - 23 = 12$$

$$18 - 3 = 21$$

How might he know?

What errors have been made in each calculation?

Rosie thinks she knows the missing number without calculating the answer.

Can you explain how this could be possible?

Both missing numbers are less than 10

$$7 + \boxed{} < 7 + \boxed{}$$

How many different possible answers can you find?

Continue the pattern.

$$90 = 100 - 10$$
$$80 = 100 - 20$$
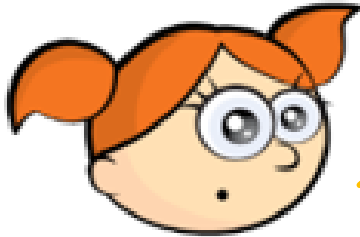$$70 = 100 - 30$$

What are the similarities and difference between this pattern and the following one?

$$9 = 10 - 1$$
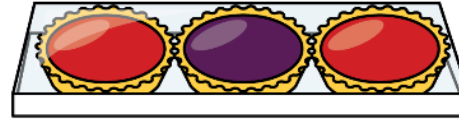$$8 = 10 - 2$$
$$7 = 10 - 3$$

Alex says,

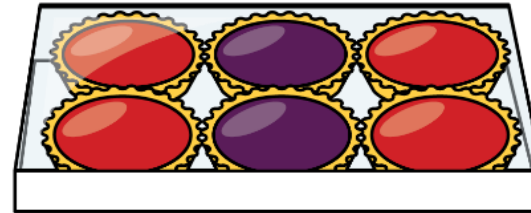If I know $9 + 1 = 10$, I can work out $90 + \_\_\_ = 100$

Find the missing number and explain how Alex knows.

Whitney has **3** jam tarts.

Tommy has **6** jam tarts.

Altogether they have **9** jam tarts.

$3 + 6 = 9$

So _____ + _____ = 90

What if all of the red jam tarts are eaten?

What if all of the purple jam tarts are eaten?

Eva thinks,

There are 10 different number bonds to 90 using multiples of 10

Amir thinks,

There are only 5

Who is correct?

Can you help the person who is wrong to understand their mistake?
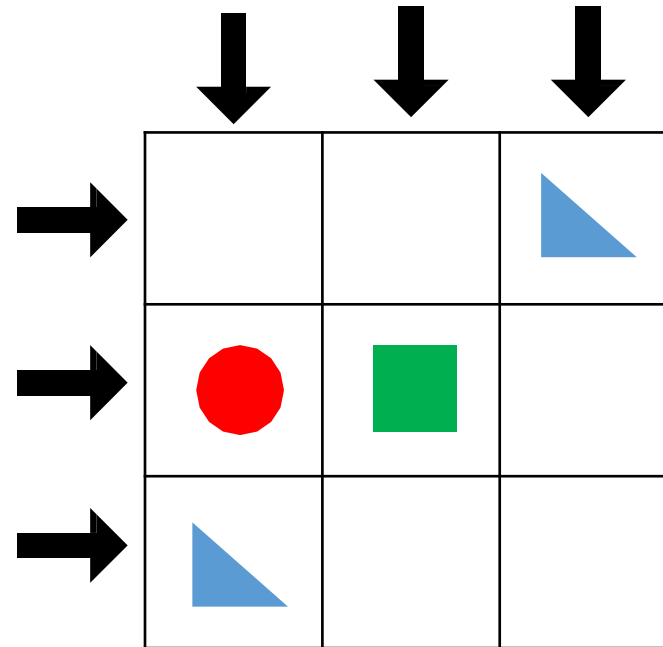
Using multiples of 10, how many number bonds are there for the following numbers?

20   30   40   50

What do you notice about the amount of bonds for each number?

If 80 has 5 bonds, predict how many 90 would have.

Squares are worth 10
Triangles are worth 20
Circles are worth 30

Can you complete the grid above so that all horizontal and vertical lines equal 60?

Can you create another pattern on an empty grid where each line equals 60?

How many possible ways are there to solve this?

True or False?

These four calculations have the same answer.

$$1 + 4 + 2 \qquad 4 + 2 + 1$$

$$2 + 4 + 1 \qquad 4 + 1 + 2$$

These four calculations have the same answer.

$$7 - 3 - 2 \qquad 2 - 3 - 7$$
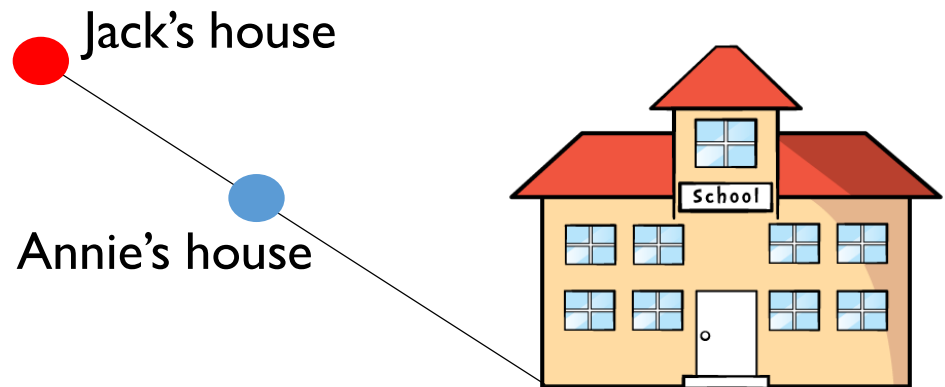
$$3 - 2 - 7 \qquad 7 - 2 - 3$$

Jack lives 5 km from school.
Annie lives 4 km from school in the same direction.

What is the distance between Jack and Annie's houses?

After travelling to and from school, Jack thinks that he will walk 1 km more than Annie. Is he correct? Explain your answer.

What will be the difference in distance walked after 2 school days?

Jack's house

Annie's house

School

SALE

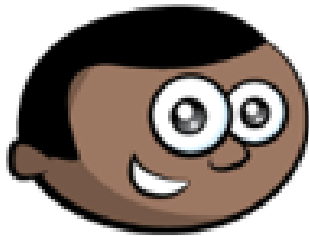35 p   22 p   68 p   15 p

The cost of each piece of fruit is reduced by 10 p.

What are the new prices?
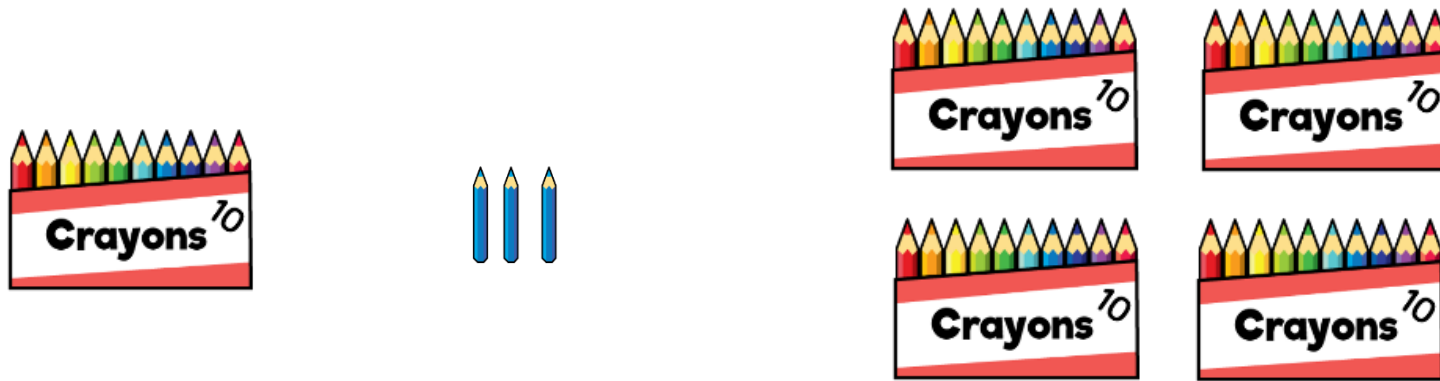
Mo says,

I know that 10 more than 72 is 82 because I only have to look at the tens digit.

Is he correct?
Explain your reasoning.

Class 3 gives one of their full packets of crayons away.

How many crayons do they have left?

Explain your reasoning.

Rosie is counting backwards in 10s.

She says,

Forty-nine, thirty-nine, twenty-nine
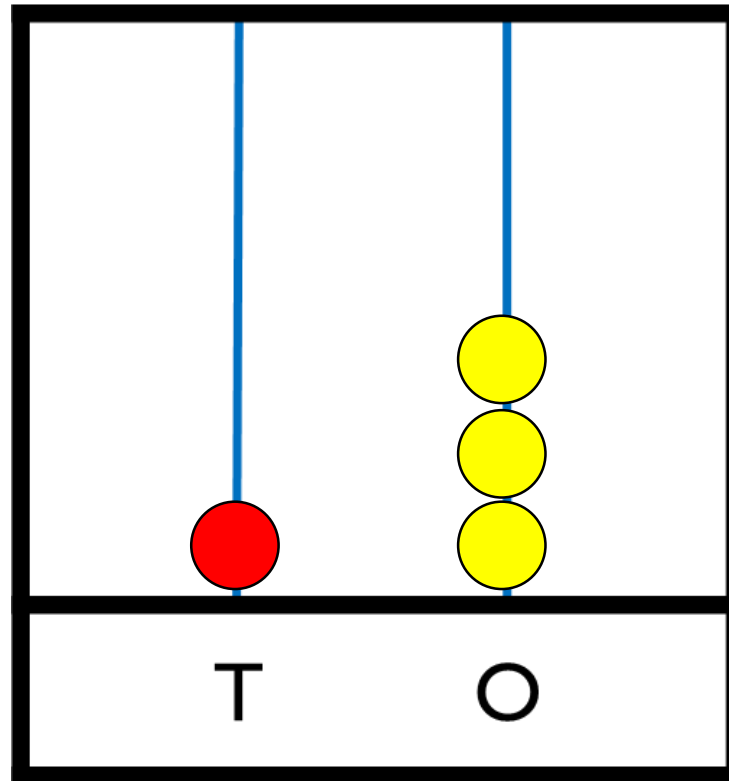
and then stops.

What numbers comes next and why?

Tommy has three spare red beads.

What numbers could he make?
Explain your answer.

Here are Class 2's crayons.

They are given a new box of 10 each day for a week.

How many crayons do they have at the end of the week?
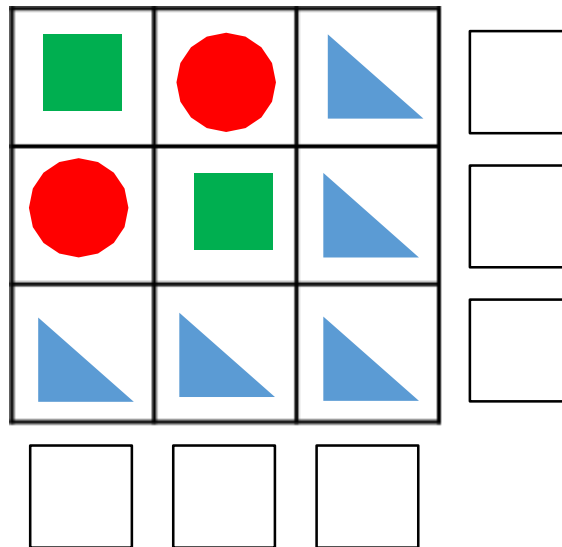
Circles represent 20
Triangles represent 10
Squares represent 50

What is the value of each row and column?

Always, Sometimes, Never
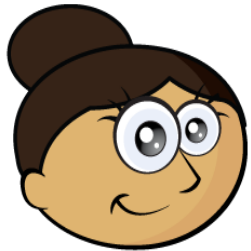
I am thinking of a two- digit number, if I add ones to it, I will only need to change the ones digit.

Explain your answer.

Here are three digit cards.

8 6 7

Place the digit cards in the number sentence.

How many different totals can you find?

☐☐ + ☐ =

What is the smallest total?

What is the largest total?

Jack and Eva are solving the subtraction $23 - 9$

Here are their methods:

I put 9 in my head and counted on to 23

I put 23 in my head and counted back 9
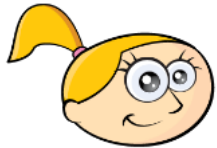
Who's method is the most efficient?

Can you explain why?

Can you think of another method to solve the subtraction.

Mo is counting back to solve $35 - 7$

He counts

35, 34, 33, 32, 31, 30, 29

Is Mo correct?

Explain your answer.

Match the number sentences to the number bonds that make the method more efficient.

42 − 5

42 − 7

43 − 8

43 − 6

42 − 2 − 3

43 − 3 − 3

43 − 3 − 5

42 − 2 − 5

Annie has 12 marbles.

Ron has 13 marbles more than Annie.

How many marbles do they have altogether?
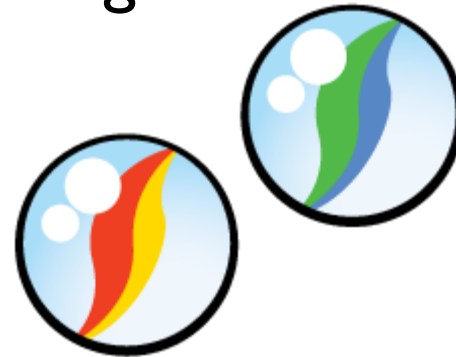
Amir has been asked to complete the bar model.

?	
52	17
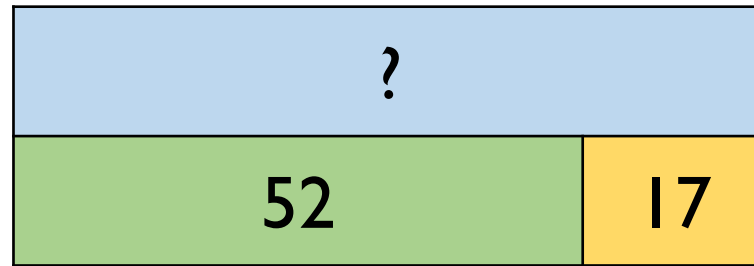
The whole is 78 because 5 + 2 = 7 and 1 + 7 = 8

Explain to Amir what he has done wrong. How could you help him work out the correct total?

What digits could go in the boxes?

$$\boxed{}\,2 + \boxed{}\,5 = 87$$

8	2	3	5	7	6	4	1	9

Can you create a calculation where there will be an exchange in the ones and your answer will have two ones and be less than 100?

How many different ways can you solve 19 + 11?

Explain your method to a partner.

Use concrete or pictorial resources to help explain your method.

Find all the possible pairs of numbers that can complete the addition.

$$
\begin{array}{c c}
\boxed{1} & \boxed{} \\
\boxed{2} & \boxed{} \\
\hline
\boxed{4} & \boxed{2} \\
\end{array}
$$

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How do you know you have found all the pairs?

What is the same about all the pairs of numbers?

Annie has **33** stickers.

Dexter has 54 stickers.

How many more stickers does Dexter have?

What method did you use to solve the problem?

Find the missing numbers.

$$
\begin{array}{cc}
\boxed{6} & \boxed{} \\
\boxed{2} & \boxed{} \\
\hline
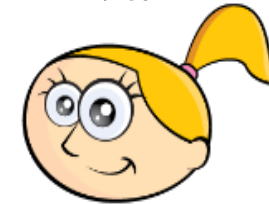\boxed{4} & \boxed{2}
\end{array}
$$

Is this the only possible solution? Explain your answer.

Make the numbers using Base 10 to help you find your answer.

Eva and Whitney are working out some subtractions.

One of my numbers in my question is 15

Eva

Whitney

I am working out 74 − 56

Whitney's answer is double Eva's answer.

What could Eva's subtraction be?

Find the greatest whole number that can complete each number sentence below.

$$45 - 17 > 14 + \underline{\quad\quad}$$

$$26 + 15 < 60 - \underline{\quad\quad}$$

Explain your answer.

Teddy has completed the missing number sentence.

$$46 + 64 = 100$$

Is Teddy correct?
Explain your answer.

Each row and column adds up to 100.

Complete the grid.

45	45	
	35	
15		65

Complete the pattern.

$$15 + 85 = 100$$
$$20 + 80 = 100$$
$$25 + 75 = 100$$
$$30 + \underline{\hphantom{00}} = 100$$
$$\underline{\hphantom{00}} + \underline{\hphantom{00}} = 100$$

Can you explain the pattern?

Always, Sometimes, Never

odd + odd + odd = odd

Use one-digit numbers to test if this is true e.g.

$$3 + 5 + 7$$

Which numbers would you add together first in the following number sentences?
Why would you add those first?

$$3 + 5 + 7 =$$

$$8 + 2 + 6 =$$

$$4 + 3 + 4 =$$

Is there always an easier order to add three one-digit numbers?

Take 3 consecutive one-digit numbers, e.g. 4, 5 and 6.

Add them together.

What do you notice?

Choose different groups of 3 consecutive one-digit numbers and see if there is a pattern.

| 8 | 2 | 3 | 5 | 7 | 6 | 4 | 1 | 9 |