

TASK A

Look at the bar model below.

Can you write all of the number sentences in the fact family?



$$13 + 4 = 17$$

$$4 + 13 = 17$$

$$17 - 13 = 4$$

$$17 - 4 = 13$$

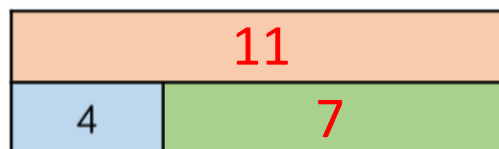
TASK B

Here is an incomplete bar model.

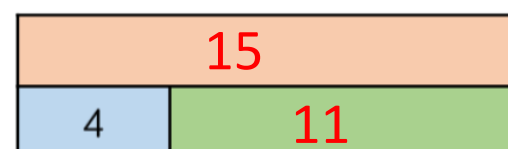
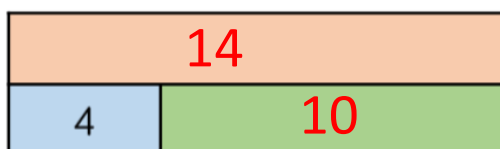
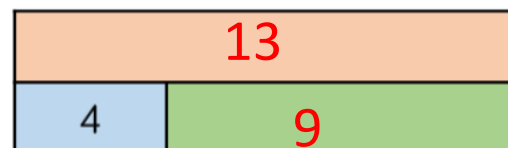
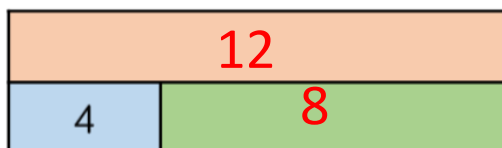
The total is greater than 10 but less than 20

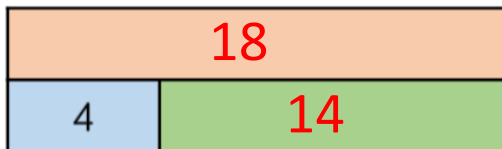
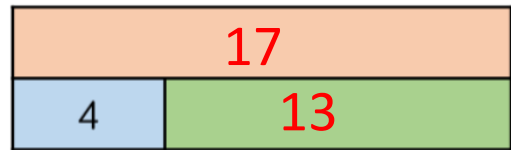
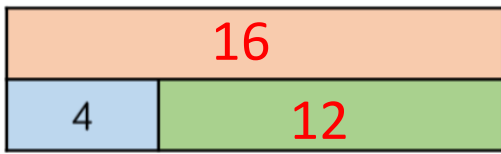
What could the missing numbers be?

How many different combinations can you find?



There are another 8 possibilities to find.





TASK C

$$8 - 5 = 3$$

$$8 - 3 = 5$$

$$8 = 5 - 3$$

$$3 = 8 - 5$$

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?

After you have talked about your ideas, jot down your thoughts here:

Rosie is not correct because $5 - 3$ does not equal 8. To make this correct, we would need to change the $-$ symbol to an $+$ symbol.

$$5 + 3 = 8 \text{ or } 8 = 5 + 3$$

TASK D

Eva did the following calculation:

$$12 - 8 = 4$$

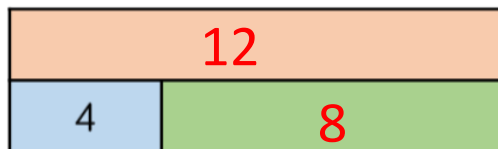
She checked it by using the inverse.

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

What advice would you give her?

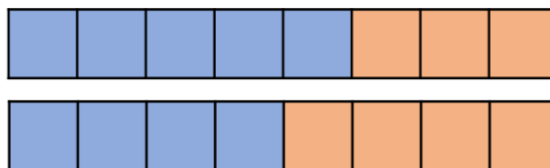
After you have talked about your ideas, jot down your advice here.

You can't simply change the subtraction symbol to an addition symbol as the answers will be different. Look at the bar model below which shows $12 - 8 = 4$. We can clearly see that the addition to check the inverse would be $4 + 8 = 12$



TASK E

How can we use the following representation to prove that $5 + 3 = 4 + 4$?



After you have talked about your ideas, jot them down here.

Using a bar model with equal sized parts, we can see that the top bar represents $5 + 3$ (5 blue + 3 orange) = 8 blocks altogether. By lining the next row of blocks up underneath, we can see that $4 + 4$ (4 blue + 4 orange) = 8 blocks. (Both are the same length, so both calculations are equal.)