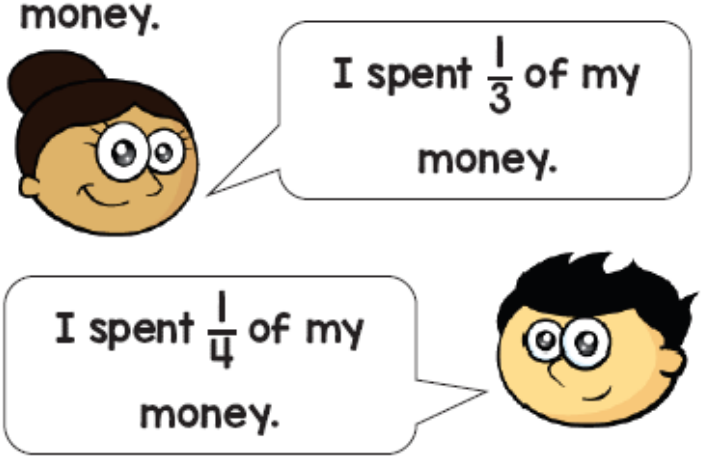
Problems of the Day *Day 17 Answers*

1 Jack and Dora each have some money.

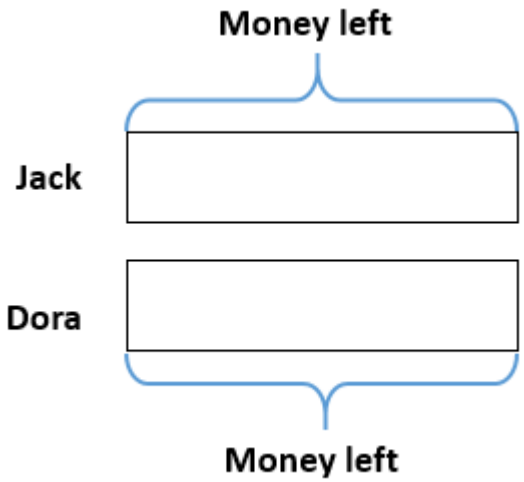


They have the same amount left.

Dora spent £72

How much money did Jack spend?

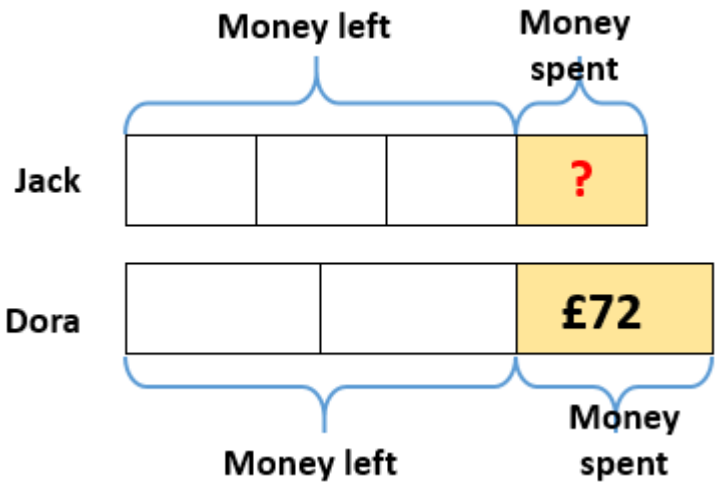
Both children have the same money left:



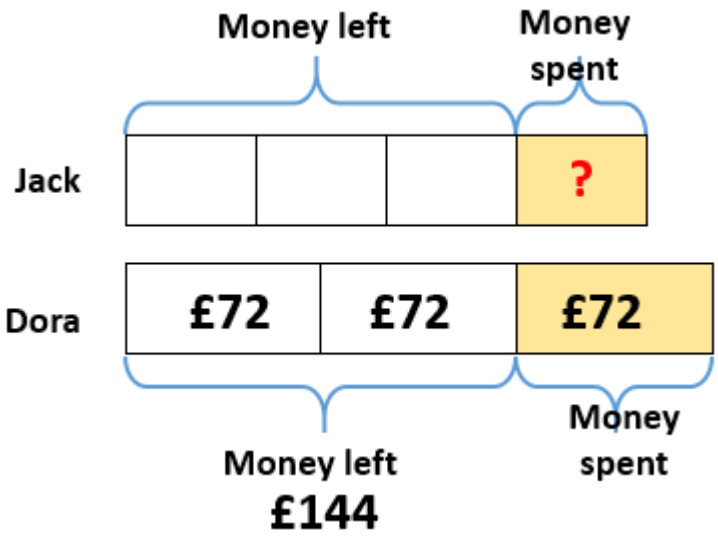
Dora has spent one third and so has two thirds left

Jack has spent one quarter and so has three quarters left.

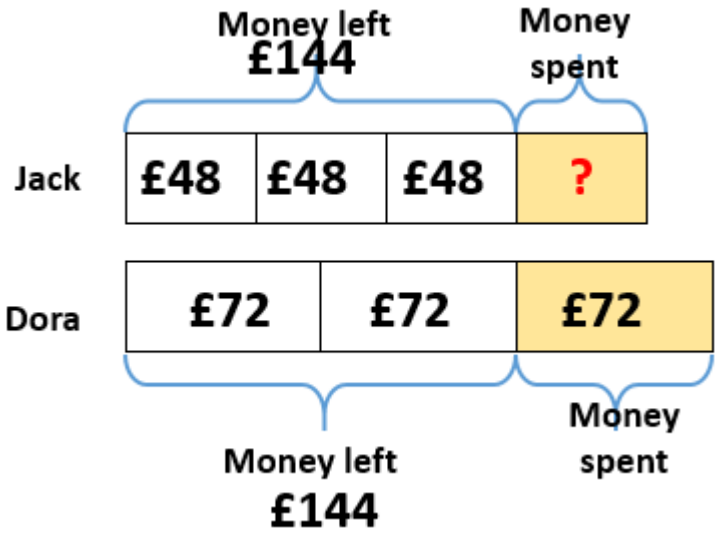
We add the information to the bar.



We can see that one third of Dora's money is £72. This means that the two thirds that are left total £144

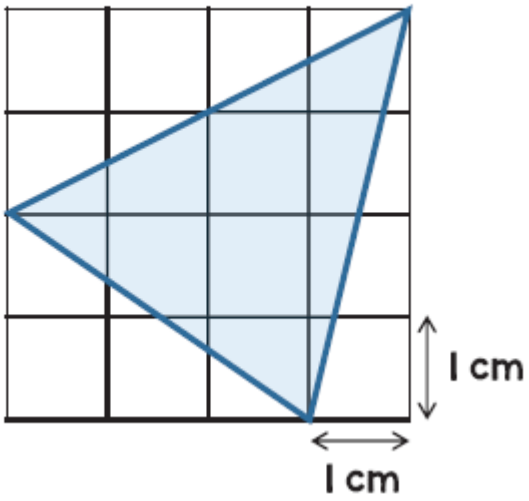


Jack has the same amount left. This is three quarters of the money he started with. One quarter must be £144 ÷ 3 = £48.



Jack spent one quarter of his money, which we can see is **£48.**

2 What is the area of the triangle?



This question is one of those questions where you have to look at it and think what strategies you could use.

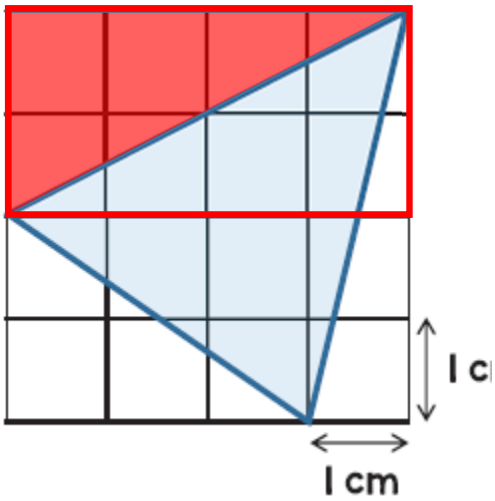
- I can't calculate the area, as I don't know the length of the base.
- I could try to break the triangle into smaller triangles and rectangles – but to calculate the area (rather than estimate), the base and height of the smaller triangles must be a whole number of squares. I can't see how I could do this.

So what do I know?

I know the total area of the square is 16cm^2.

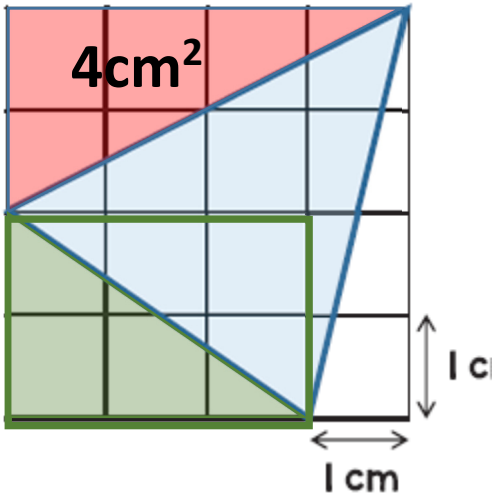
So if I can calculate the area of the white sections, I can subtract this area from the area of the square.

Once you get to this point, it's not so hard:

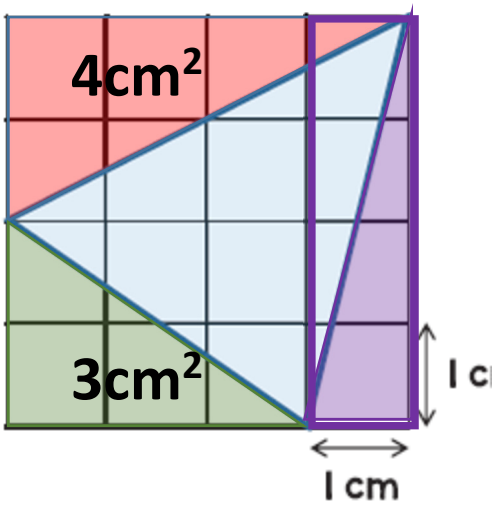


The red triangle is half of a rectangle with 8 squares, so the area must be 4cm^2

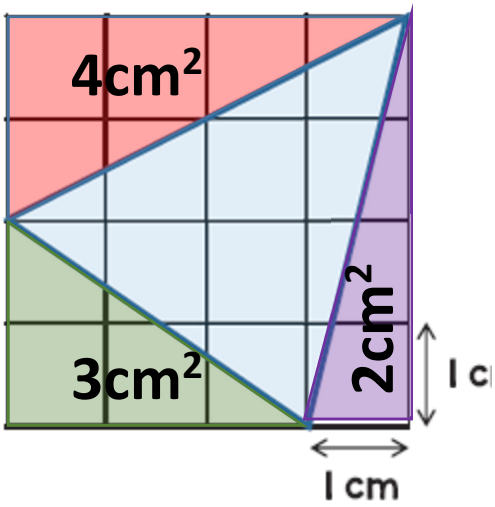
The red triangle is half of a rectangle with 8 squares, so the area must be 4cm^2



The green triangle is half of a rectangle with 6 squares, so the area must be $3cm^2$



The purple triangle is half of a rectangle with 4 squares, so the area must be $2cm^2$



The purple triangle is half of a rectangle with 4 squares, so the area must be $2cm^2$

Total area of the red, green and purple triangles is $4cm^2 + 3cm^2 + 2cm^2 = \mathbf{9cm^2}$

The area of the large square is $16cm^2$

The area of the blue triangle must be $16cm^2 - 9cm^2 = \mathbf{7cm^2}$

3 Write down all the common multiplies of 4 and 6 that are less than 50
Show or explain your method.

What are the multiples of 4 and 6 that are less than 50?

Multiples of 4	Multiples of 6
4	6
8	12
12	18
16	24
20	30
24	36
28	42
32	48
36	
40	
44	
48	

Work through the shortest column and circle those that are also multiples of 4.

These are the common multiples of 4 and 6 that are less than 50.

Multiples of 4	Multiples of 6
4	6
8	(12)
12	18
16	(24)
20	30
24	(36)
28	42
32	(48)
36	
40	
44	
48	

There is a quicker method:

I know that the lowest common multiple of 4 and 6 is 12.

Every multiple of 12 will be a common multiple of 4 and 6.

So the multiples of 12 less than 50 are:

12, 24, 36 and 48