

The first room:

There is a pile of dice.



Three of them are put in a row. The numbers on the top of these three add to 8.

What do the hidden numbers on the bottom add to?

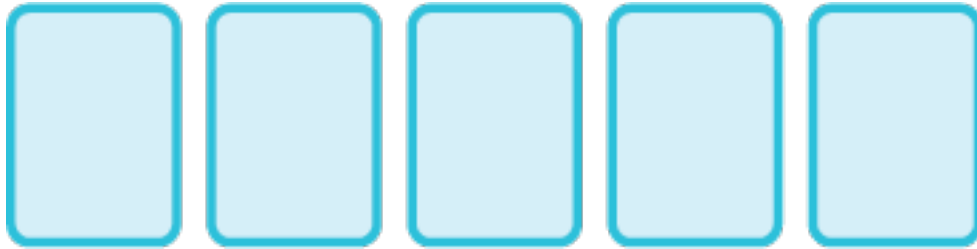
This number is the first key.

Because the numbers opposite on a die add to 7, the total of the tops and bottoms of the three dice are 21. $21 - 8 = 13$, giving us the sum of the bottom numbers and the first key.

The second room:

Skippy and Anna have the first key number. They have gone through the first locked door.

There are ten cards numbered from 0 to 9. Five of these are face down in a row on the table.



The numbers on the first two cards add to the first key number.

The numbers on the second and third cards add to 9,

the numbers on the third and fourth cards add to 11,

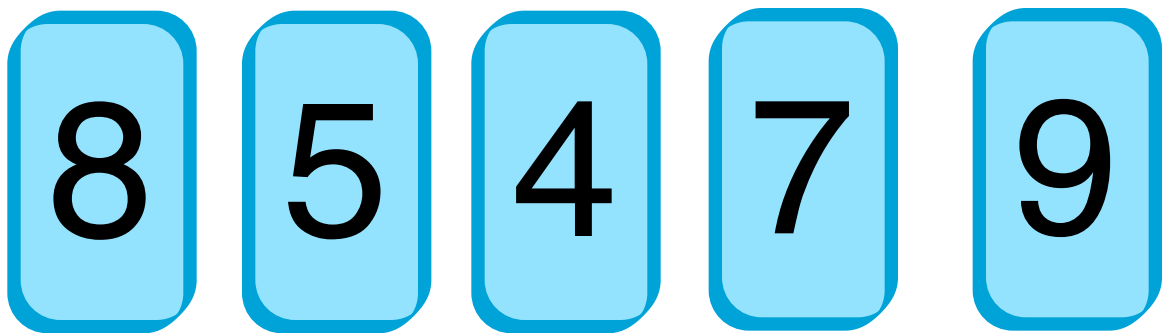
and the numbers on the fourth and fifth cards add to 16.

What number is on the last card? This number is the second key.

First, we consider the last two numbers. If they add up 16, they have to be 9 and 7 or 7 and 9. If the last card is a 7, then it would be like this...



As the numbers have to be different, these 7's cannot coincide

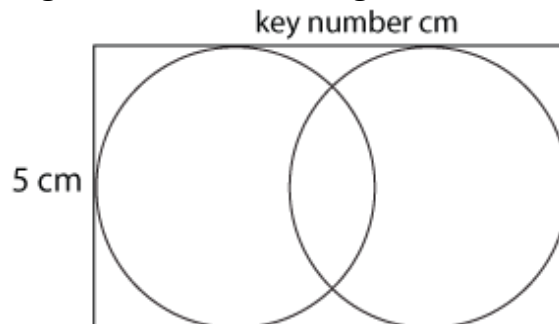


This is the correct card combination. Therefore, the second key number is 9.

The third room:

Skippy and Anna have the second key number. They have gone through the second locked door. Here there is a diagram.

There are two overlapping circles inside a rectangle. The rectangle is the second key number of centimetres long and 5 centimetres high.



How far apart are the centres of the two circles?

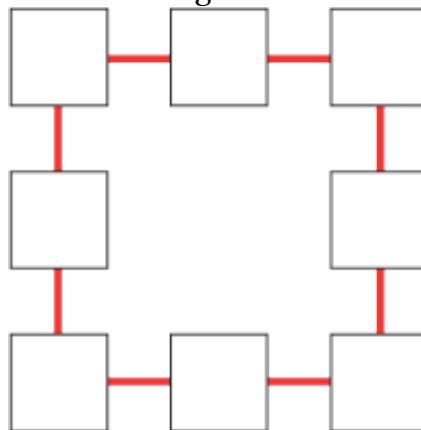
Square this answer and subtract one. This will give you the third key number.

Imagine the circles if they were just touching, not overlapping. They would total 10 cm, so the overlap must cover 1 cm, as the second key number is 9 ($5 + 5 - 1 = 9$). The radius of one circle is 2.5 cm. $2.5 + 2.5 - 1$ would be the length between two centres. According to the question, you need to square it and subtract 1. 4^2 is 16, and $16 - 1$ is 15, the third key number.

The fourth room:

Skippy and Anna have the third key number. They have gone through the third locked door.

On the floor there is a strange diagram and the numbers from 1 to 8 on eight cards. The diagram is a square with eight boxes arranged round it.



Skippy and Anna have to arrange the numbers in the boxes so that each side of the square adds to the third key number.

To find the fourth key number, add the numbers on all the corner boxes and then subtract 10.

If the four sets of numbers were separated, their sum would equal 60 (15×4). However, this repeats the corner numbers. To isolate the corners, we subtract $1 + 2 + 3 + 4 + 5 + 6 + 7 + 8$, which is the sum of the proper arrangement, leaving us with $60 - 36 = 24$. $24 - 10 = 14$ (the fourth key number).

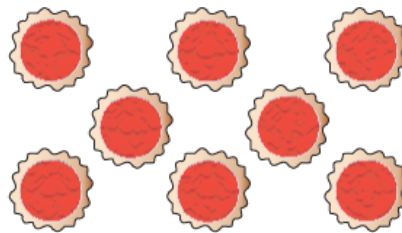
The fifth room:

Skippy and Anna have the fourth key number. They have gone through the fourth locked door.

On the table there are some jam tarts.

There are also two special trays used to cook them in. These hold the key number of tarts each.

There are enough tarts to fill one tray but not enough to fill the other one as well.



If the tarts are counted in fours there are three left over.

If they are counted in threes there is one left over.

How many tarts are there altogether? This number is the fifth and last key.

First of all, we can tell that the number of tarts is odd, as $4x + 3$ is an even number plus an odd number, resulting in an odd number. The total number of tarts must be less than 28 and more than 14.

Numbers that fit the above requirements and leave three when counted in fours:

15, 19, 23, 27

Numbers that fit the above requirements and leave one when divided by three:

16, 19, 22, 25

The only solution that repeats in both of these sentences is “19”.

The last question:

However, before they can finally leave the castle you must answer a last question.

What is Skippy's real name?

Using the code 1 = A, 2 = B, 3 = C, ... 26 = Z translate all the key numbers into letters.

These letters will give you an anagram of Skippy's real name. When you have worked this out you have finally finished!

The key numbers are 13, 9, 15, 14, and 19, representing m, i, o, n, s. Simon is the anagram of these letters.