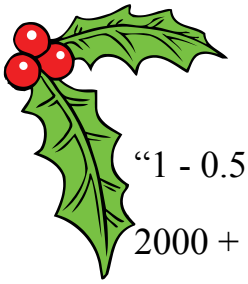
CHRISTMAS CAPERS

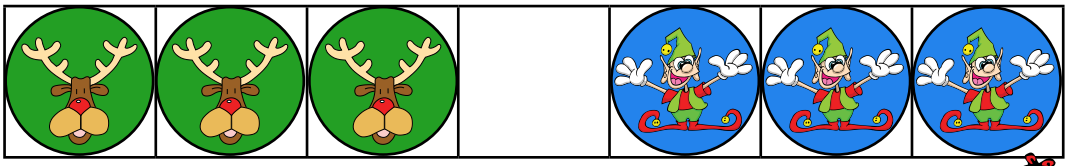


"1 - 0.59596 = _____" said Santa as he ate a small piece of 2000 + 33006 = _____. He had just finished loading the 3691 × 125 = _____ when 10 + 24 = _____ realised he couldn't 67 × 5 = _____ a single reindeer. He removed his 896101 × 6 = _____ and shook his head, he was 400 + 406 = _____ smacked. "27689 × 2 = _____ me." he said, "Where can they have gone? If we don't 60 ÷ 100 = _____ soon we'll never get round all the children tonight." He grabbed 900 - 386 = _____ 2395 + 5343 = _____ and rang it loudly. He waited, and listened, but nothing happened. "Come on boys," he muttered, "or 1191 × 3 = _____ I'll have to phone the 2 ÷ 100 = _____ and 319 × 2 = _____ them to send some more reindeer, imagine the size of the 8218 - 500 = _____." Just then came a 8 × 47077 = _____ from behind the stables. First Santa saw a small pair of 23596 + 33738 = _____, then two long 1879 × 3 = _____, then at last the whole of Rudolph appeared. "Have you been at the 4001 × 8 = _____?" "8.5074 ÷ 11 = _____ Santa, of course not. Did you like our little joke? Don't look so worried. The others are ready, but they are hiding in a 463 × 8 = _____ 5000 - 386 = _____ in the 6 × 9619 = _____." He smiled. "They know you're the 9000 - 3492 = _____ really."

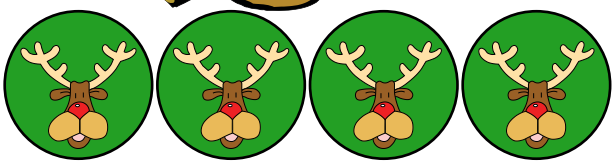
"Alright, come on it's time to 12 ÷ 20 = _____." said Santa with a 923 × 5 = _____ of relief. He got out 257 × 2 = _____ list. "Now, let's see, I've got the right 128.6 × 25 = _____ computer for 28867 × 11 = _____ and the 637 ÷ 1000 = _____ for Gemma, the bike 16611 ÷ 3 = _____ the 5738 + 2000 = _____ for 3 × 246017 = _____, ..."

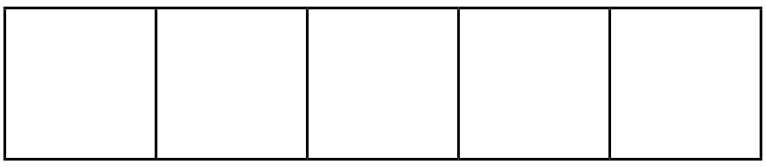
JUMPING ELVES

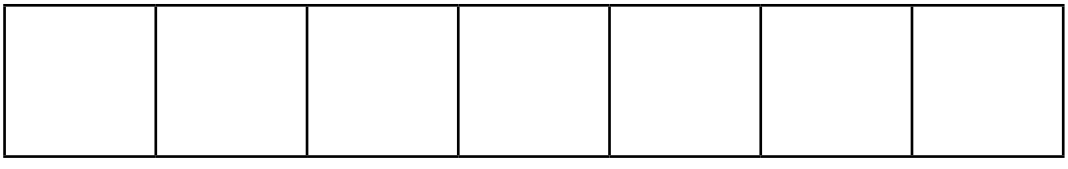
Equal numbers of elves and reindeer face each other.
(In this example 3 of each).
They have to get to the opposite side of the grid.
They can jump over one of the opposing side into an empty space,
or slide into an empty space next to them.
They can move in no other way.
Investigate the least number of moves it takes to swap sides.

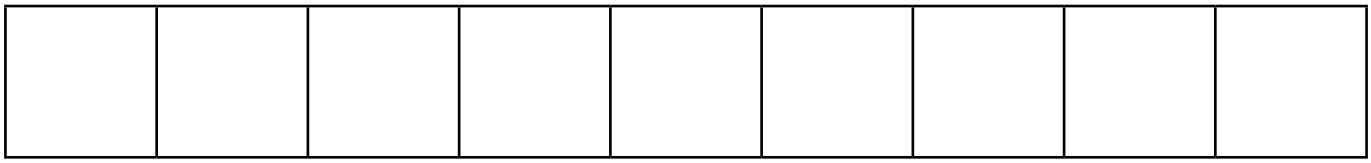


Below are some counters and grids
you can cut out that may help
in this investigation.





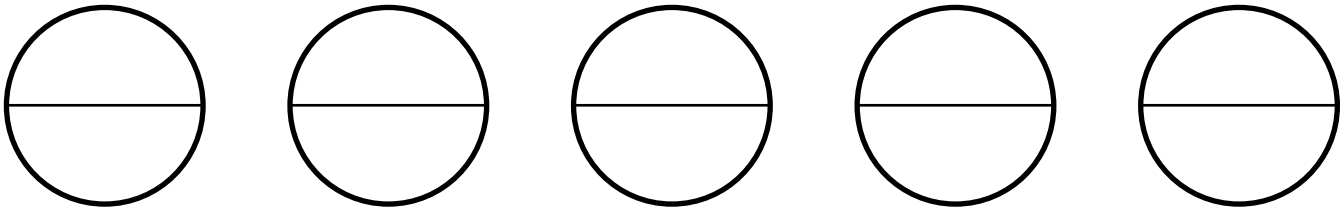




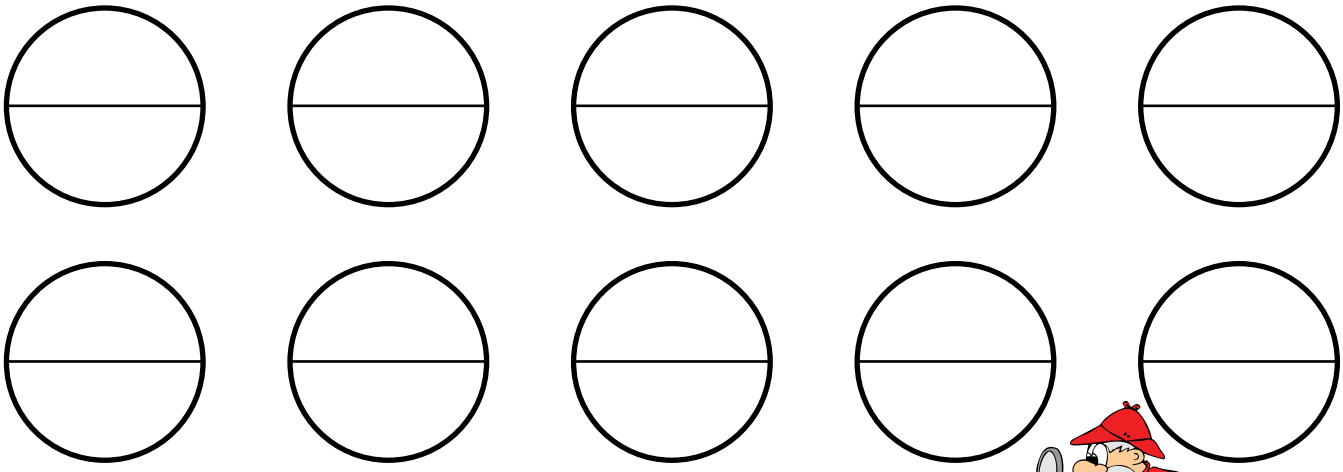
PERMUTATING BAUBLES 1

You may not need all the baubles shown for each part of the question.

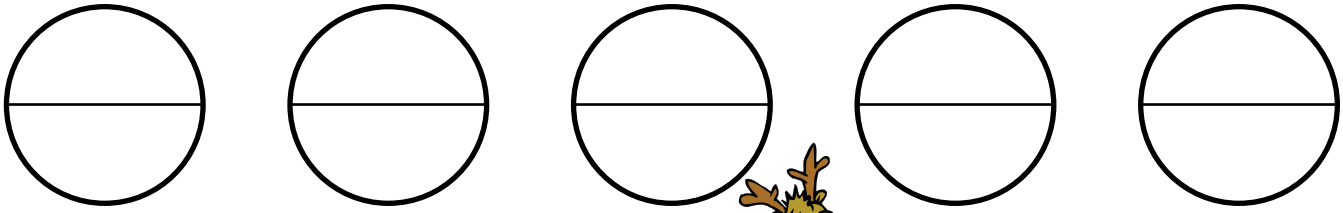
Choose 2 colours. Colour each section of the bauble using one of your colours.
You can use each colour *more than once* on each bauble. Make each bauble different.
How many different designs can you make?



Choose 3 colours. Colour each section of the bauble using one of your colours.
You can use each colour *more than once* on each bauble. Make each bauble different.
How many different designs can you make?



Choose 1 colour. Colour each section of the bauble using your colour.
You can use the colour *more than once* on each bauble. Make each bauble different.
How many different designs can you make?



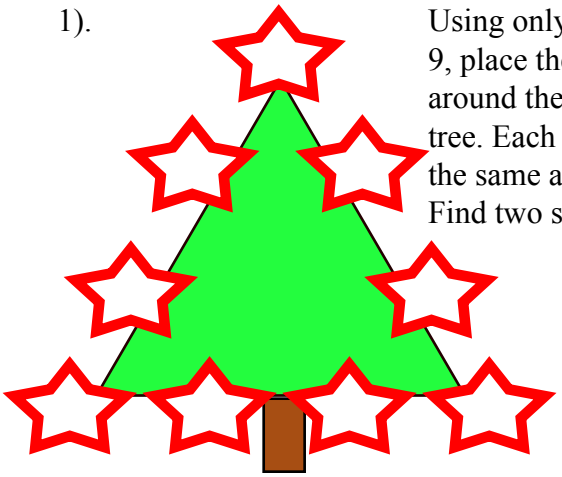
Complete the table for 1, 2 and 3 baubles.

Number of colours used	1	2	3	4	5
Number of different baubles made					

Predict how many different baubles can be drawn using 4 and 5 different colours. Fill in the table.
How could you test these predictions? What is the pattern?

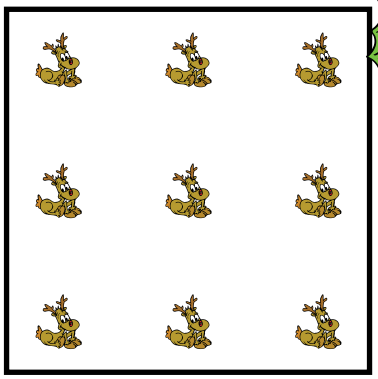
QUIZTMAS QUIZZ

1).



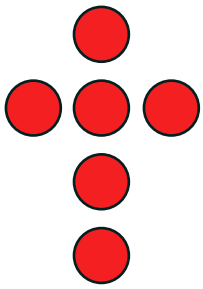
Using only the digits 1 to 9, place them in the stars around the Christmas tree. Each side must total the same amount.
Find two solutions!

2).



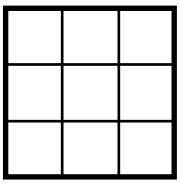
Santa needs to create a pen for **each** reindeer.
Draw two **squares** to create the pens.

3).



Rudolph creates a Christmas cross for Santa out of coins.
Show Rudolph how you can move 1 coin and have a cross with 4 coins in each row.

4).



Santa looks out of his window at Rudolph. He notices the squares in the window.

How many different squares are there in the window?
They don't have to be the same size!

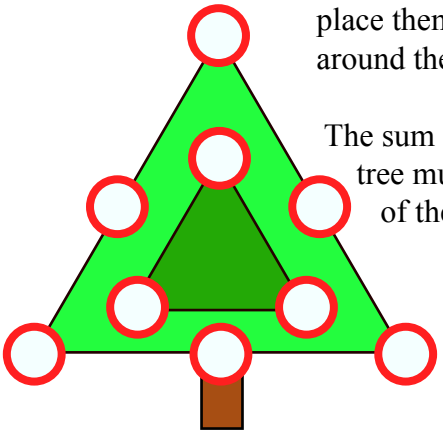
5).

All the elves are in Sanata's workshop holding a toy. The elves are all of different heights. Santa asks the elves to swap the toys. However, nobody is allowed to swap toys with anyone that is shorter than themself.
How many toys are swapped?

6).

There are 6 elves, 3 of the elves have a present.
Can you move one elf and make the pattern of:
present, no present, present, no present, present, no present.

7).



Using only the digits 1 to 9, place them in the baubles around the Christmas tree.

The sum on the outside of the tree must be DOUBLE that of the inside triangle.

8).

The presents are on the sleigh and the **35** elves slap each other on the back and give handshakes all around.

If evey elf shakes hands with every other elf, how many handshakes will there be in total?

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