

Fifteen Cards

Age 7 to 11 ★

I have fifteen cards numbered 1 – 15.

I put down seven of them on the table in a row.



The numbers on the first two cards add to 15.
The numbers on the second and third cards add to 20.
The numbers on the third and fourth cards add to 23.
The numbers on the fourth and fifth cards add to 16.
The numbers on the fifth and sixth cards add to 18.
The numbers on the sixth and seventh cards add to 21.

What are my cards?

Can you find any other solutions?

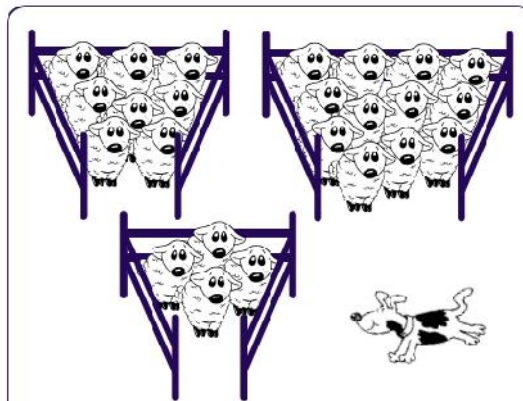
How do you know you've found *all* the different solutions?

Roll These Dice

You need: three dice - two red and one green. What you have to do: Roll the dice to get three numbers, then add the numbers on the red dice and subtract the number on the green die.

- What are all the different possibilities that could come up?
- What are the final answers by doing the addition and subtraction each time?
- Is there a good way of making sure you find all the possibilities?
- What is the biggest number you can get? ... and the smallest?
- How will you record what you've found out?

Sheepdog trials



A farmer and his dog enter a sheepdog trial. In this event his dog must shepherd 24 sheep into three pens of different sizes. Each pen must have a different even number of sheep. The largest pen must have the most sheep and the smallest pen must have the fewest sheep.

How many sheep might the dog try to get in each pen? Find as many different ways as you can.