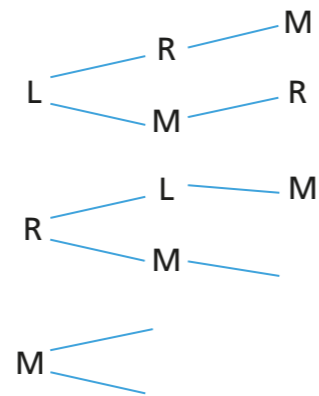


# Use the product rule for finding the total number of possible outcomes

1 Nijah has 3 sweets left: lemon, raspberry and mango. She cannot decide which order to eat them in.

a) Complete the representations for all the possible orders.

First	Second	Third
L	R	M
L	M	R



b) How many possible arrangements are there?

2 A meal on a train has 4 choices for food and 3 choices for drinks. You can choose one food item and one drink item.

a) List all the possible options.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

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**FOOD**

Sandwich

Rice

Pasta

Soup

**DRINK**

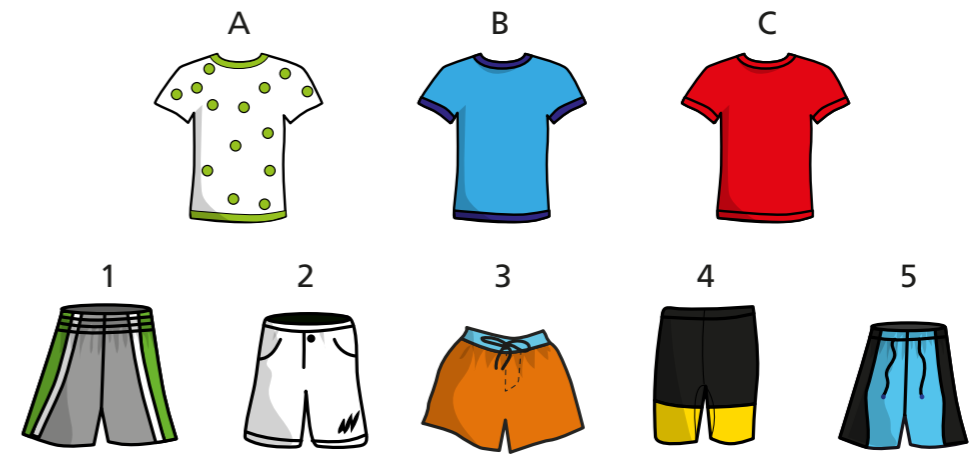
Orange juice

Tea

Coffee

b) How many options are there?

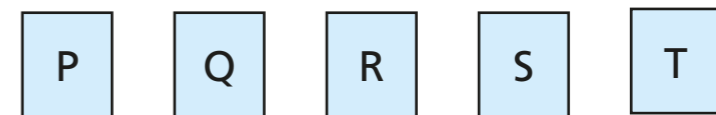
3 Ron wears a T-shirt and a pair of shorts to the gym. He has 3 T-shirts and 5 pairs of shorts.



a) How many different combinations of outfits are there? Show your method for working this out.

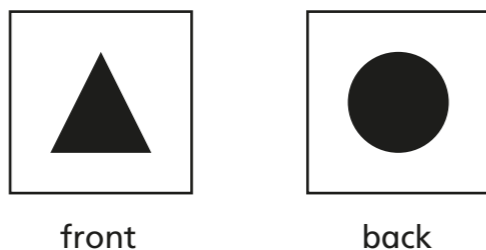
b) Ron buys 2 new pairs of shorts. How many different combinations are there now?

4 Mo has some cards labelled with letters.

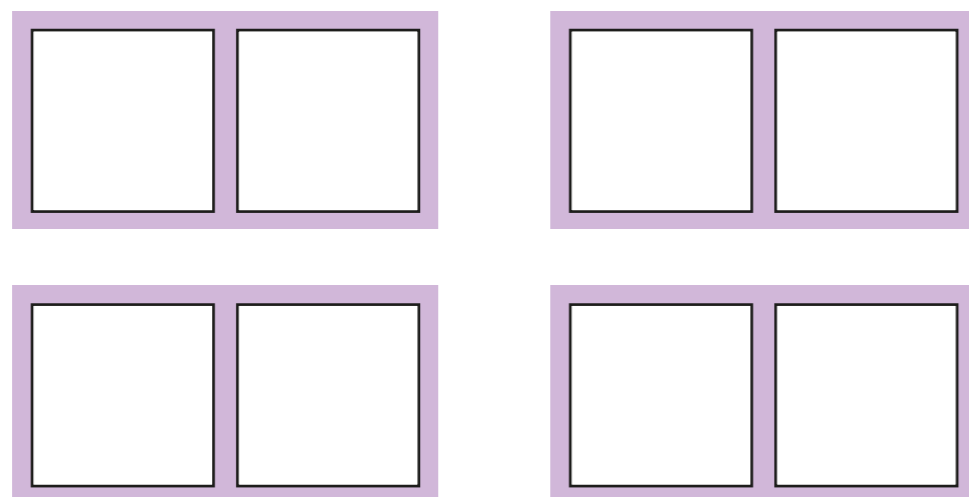


Mo also has some cards labelled with numbers. Mo chooses a letter and a number card. He notices he has 45 different possibilities. How many number cards does he have?

- 5 Teddy is creating pictures using two cards.  
One side of each card shows a triangle and the other side shows a circle.



- a) Show the four patterns he can make using the two cards.



- b) Teddy is part of a secret club and wants each of the ten members to have their own pattern using three of these cards.



Explain why Teddy will not be able to give each member their own pattern.

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- c) Suggest a way that Teddy could change his design so that each member of the secret club could have their own pattern.

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- 6 Brett chooses 2 socks from these socks.



How many different combinations are there?

- 7 In a restaurant you can choose a starter, a main course and a dessert.  
The restaurant advertises that it has exactly 100 combinations of food.  
Design a menu that will give these 100 combinations.