

The Product Rule for Counting Section Test

1. A crumble is being made with two fruit ingredients. One fruit must be chosen from the first column in the below and the other fruit from the second column. How many different crumbles can be made? List them.

Apples	Raisins
Pears	Blackcurrants

2. How many three-digit numbers can be made using the digits 2, 4 and 6 (digits can be repeated and you don't have to use all the digits so that 224 would be allowed)?
3. How many two digit numbers are there which don't have 0 as a digit?
4. How many four character codes are there using the characters A, B, C, D, E. Each character can be used as many times as you like.
5. A sandwich shop offer four types of bread, eight fillings and six sauces. Customers can choose not to have any sauce on their sandwich. How many different sandwich choices are there?
6. How many four character codes are there where the first two characters are digits 0-9 and the second two characters are capital letters if repetition is allowed.
7. Three students are to be selected to represent a school at an event. One student is to be selected from year 11, one from year 12 and one from year 13. There are 150 students in year 11, 30 students in year 12 and 22 students in year 13. How many distinct selections of the three students are possible?
8. In creating an avatar for a video game the player has to choose one of five character classes, then one of 4 clans, then one of 6 special powers. How many possible avatars are there?
9. There are 10 questions in an exercise. In how many different ways can these questions be arranged?
10. A meal deal in a supermarket consists of a sandwich, a packet of crisps and a drink. The supermarket says that there are 240 possible meal deals. If there are 10 types of sandwich and 4 types of drink how many different types of packet of crisps must there be?