

I have 3 tins of mushroom soup, 3 tins of baked beans and 3 tins of rice pudding in my cupboard, but the labels have all fallen off. If I pick 3 tins for my lunch, what different combinations of food could I have? (Assume that I will only open the tin just before cooking and eating so I could eat them in any order!)

Extension: I tell my friend about my 9 tins and she brings over three tins of mushy peas, also without labels and we mix them up – how many different meals could I have if I chose three tins from the 12?

What is the pattern for any number of tins?



There are 3 things the first tin can be. For each of these, there are 3 things the second tin can be. For each of the options, there are 3 things the third tin can be.

This gives $3 \times 3 \times 3 = 27$ different combinations of food.

For the extended activity, there are $4 \times 4 \times 4 = 64$ different combinations of food.

For n different varieties of tines (with 3 tins of each), the pattern is that there are n^3 different combinations.