8.1 Basic counting principle

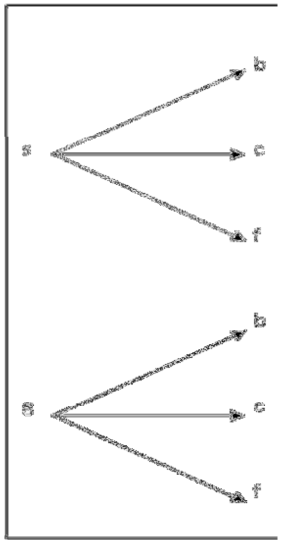
EX 1: If the menu at a restaurant has the following choices:

Appetizer: soup or green salad

Main course: beef, chicken or fish

Dessert: pie or ice cream

How many possible outcomes (combinations of meals) are there?



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2 x 3 x 2 = 12 possible outcomes

Appetizer Main Dessert

Basic Counting Principle

If there are m ways to do one thing,
and n ways to do another,
then there are m x n ways of doing both.

EX 2: How many outfits can be worn with 4 different shirts, 3 pants and 3 pairs of shoes.

Ex 3: How many outcomes are there when

a) Rolling 1 die

d) Flipping a coin

b) Rolling 2 dice

e) Flipping a coin 3 x

c) Rolling 3 dice

f) Flipping a coin 3 x and rolling a dice 2 x

Ex 4: How many possible Quebec license plates start with 3 numbers followed by 3 letters?

How about in Ontario?

How about if no repetition is allowed?

Practice:
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