8.1 Fundamental Counting Principle

Note Title 17/12/2012

A six character password with only lowercase letters:

$$26 \times 26 \times 26 \times 26 \times 26 \times 26 = 26^6$$
$$\approx 310\,000\,000$$

With lowercase & capitals:

$$52^6 \approx 20{,}000{,}000{,}000$$

With lower, upper & digits:

$$62^6 \approx 57{,}000{,}000{,}000$$

How many postal codes does BC have if they look like

V number letter number letter number

$$1 \times 10 \times 26 \times 10 \times 26 \times 10 = 676\,000$$

How many does Ontario have? (They can begin with K, L, M, N or P)

$$5 \times 10 \times 26 \times 10 \times 26 \times 10 = 3\,380\,000$$

If a fast food restaurant has 10 burgers, 6 different sides and 15 different drinks, how many meal combinations can they advertise?

$10 \times 6 \times 15 = 900$

With 7 desserts?

6300

Tree Diagram