6 letters (objects)

Example 3

In how many ways can you rearrange the letters in the word FLUFFY?

3 identical letters (objects)

$$\frac{\text{total \# of objects}!}{\text{Total \# of identical objects}!}$$

$$= \frac{6!}{3!}$$

$$= 120 \text{ different ways}$$

Example 4

In how many ways can you re-arrange the letters in the word MISSISSIPPI? (4 i)

4S 2P

$$= \frac{\text{total objects}!}{\text{Total identical objects}!}$$

$$= \frac{11!}{4!4!2!}$$

S I P

$$= 34650$$

Example 5

A grocer wants to put cans of soup in a line on a shelf. They have six identical cans of tomato soup, four identical cans of chicken noodle soup, seven identical cans of clam chowder, and one can of cream of mushroom. In how many ways can these cans be placed on the shelf?

$$\frac{\text{Total objects}!}{\text{Total identical objects}!} = \frac{18!}{6!\,4!\,7!}$$

$$= 73\,513\,440$$