

Product rule

[CONTENTS](#)

Worked example

At a restaurant, there are 4 choices for starters and 2 choices for mains.
A meal consists of one starter and one main.
How many different meals are possible?

Your turn

At a restaurant, there are 3 choices for starters and 5 choices for mains.
A meal consists of one starter and one main.
How many different meals are possible?

15

Worked example

There are 20 girls and 16 boys in a tennis club.

For a mixed doubles match, 1 boy and 1 girl form a team.

How many different teams can be formed?

Your turn

There are 10 girls and 32 boys in a tennis club.

For a mixed doubles match, 1 boy and 1 girl form a team.

How many different teams can be formed?

320

Worked example

There are 24 boys and 20 girls in a class.

The teacher will pick three students from the class and write their names in a list in order.

The order will be either:

- Boy, girl, boy
- Girl, boy, girl

How many different lists can be written?

Your turn

There are 12 boys and 10 girls in a class.

The teacher will pick three students from the class and write their names in a list in order.

The order will be either:

- Boy, girl, boy
- Girl, boy, girl

How many different lists can be written?

2400

Worked example

Integers are made using some of the digits 0, 1, 2, 3, 4, 5

Each integer made:

- Has 3 digits
- Is greater than 2000
- Has no digit repeated
- Is a multiple of 2

How many integers can be made?

Your turn

Integers are made using some of the digits 0, 1, 2, 3, 4, 5

Each integer made:

- Has 4 digits
- Is less than 3000
- Has no digit repeated
- Is a multiple of 5

How many integers can be made?

48

Worked example

There are 34 men in a group.
How many different pairs can be formed?

Your turn

There are 17 men in a group.
How many different pairs can be formed?

136

Worked example

There are 59 girls and 78 boys in Year 13 at a school.

One girl is chosen for the role of Head Girl.

A different girl is chosen for the role of Deputy Head Girl.

One boy is chosen for the role of Head Boy.

A different boy is chosen for the role of Deputy Head boy.

How many different ways can this be done?

Your turn

There are 95 girls and 87 boys in Year 13 at a school.

One girl is chosen for the role of Head Girl.

A different girl is chosen for the role of Deputy Head Girl.

One boy is chosen for the role of Head Boy.

A different boy is chosen for the role of Deputy Head boy.

How many different ways can this be done?

66814260