



JP Maths

Revision



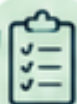
Attempt the paper
before watching the
solutions!

[https://www.youtube.com/
@JPMathsRevision](https://www.youtube.com/@JPMathsRevision)



HIGHER TIER

The product rule for counting



INSTRUCTIONS

- Use **black ink** or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided – *there may be more space than you need.*
- You must **show all your working**.
- Diagrams are **NOT** accurately drawn, unless otherwise indicated.
- If your calculator does not have a π button, take the value of π to be 3.142 unless the question instructs otherwise.



INFORMATION

- The marks for **each** question are shown in brackets– *use this as a guide as to how much time to spend on each question.*



ADVICE

- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end.



You've got this! ❤️

1. A café offers 8 different types of drinks and 6 different types of cakes.

One drink and one cake are chosen for a special offer.

Work out the total number of different combinations of drink and cake that can be chosen.

.....
(Total for Question 1 is 2 marks)

2. A student is choosing an outfit.

They have 5 different tops, 4 different pairs of trousers, and 3 different pairs of shoes.

They choose one top, one pair of trousers, and one pair of shoes.

Work out the total number of different outfits they can choose.

.....
(Total for Question 2 is 2 marks)

3. A shop sells different flavours of ice cream and different types of cones.

There are 4 types of cones and x different flavours of ice cream.

A customer chooses one cone and one flavour.

There are 28 different possible combinations.

Work out the value of x .

.....
(Total for Question 3 is 2 marks)

4. There are 8 sandwiches and x drinks to choose from for lunch.

Peter says there are 100 different ways to choose one sandwich and one drink.

Could Peter be correct?

You must show your working.

.....
(Total for Question 4 is 2 marks)

5. A teacher has 30 different books.

She gives one book to Alice, one book to Ben, and one book to Chloe.

How many different ways can the books be given out?

.....
(Total for Question 5 is 2 marks)

6. A school has 20 different students.

Three different roles are available: captain, vice-captain, and secretary.

Each role must be given to a different student.

How many different ways can the roles be assigned?

.....
(Total for Question 6 is 2 marks)

7. A padlock is opened using a 3-digit code.

Each digit can be any number from 0 to 9.

Work out the total number of different codes that can be made.

.....
(Total for Question 7 is 2 marks)

8. A padlock is opened using a 4-digit code.

Each digit can be any number from 0 to 9, but no digit can be used more than once.

Work out the total number of different codes that can be made.

.....
(Total for Question 8 is 2 marks)

9. A locker uses a 4-digit code.

Each digit is a number from 0 to 9.

Digits can be repeated.

The first two digits are 3 and then 7.

Work out the total number of different codes that can be made.

.....
(Total for Question 9 is 2 marks)

10. Aisha picks a 3-digit number.

The first digit is greater than 4.

The middle digit can be any number from 0 to 9.

The last digit is a factor of 12.

How many different 3-digit numbers could she pick?

.....
(Total for Question 10 is 3 marks)

11. Sophie picks a 5-digit number.

The first digit is even.

The second digit is a multiple of 3.

The fourth digit is 7.

The last digit is odd.

How many different 5-digit numbers could she pick?

.....
(Total for Question 11 is 3 marks)

12. Mia makes 4-digit numbers using all of these cards.

1 3 5 8

How many different numbers greater than 6000 can Mia make?

.....

(Total for Question 12 is 2 marks)

13. A club has 25 members.

Two members are going to be chosen at random to represent the club in a competition.

Work out the number of different pairs that can be chosen.

.....

(Total for Question 13 is 2 marks)

14. There are 18 players in a squad.

Two players are going to be chosen at random to be team captains.

Work out the number of different pairs that can be chosen.

.....
(Total for Question 14 is 2 marks)
