

Core Maths Summer Homework

- This is the summer homework for students intending to study **Core Maths**.
- If you are intending to study A-Level maths please collect the relevant homework for those courses!
- Please attempt all the questions and submit all your working out with your answers.
- You should submit your work on A4 paper and hand it in during the first week of lessons.

The following questions are based on GCSE topics and give you an idea of some of the topics that we will be covering in the Core Maths qualification.

- 1) A newspaper states that “The risk of being killed by being struck by lightning is about $\frac{1}{300000}$.”
 - a. What is this fraction as a decimal?
 - b. What is this as a percentage?
 - c. What is the total population of the planet?
 - d. Write this number in standard form.
 - e. If the newspaper is correct, roughly how many people will be killed by being struck by lightning each year?
- 2) Identify a savings account that pays interest.
 - a. What is the interest rate?
 - b. If I invest £20 000, how much will I have at the end of a year?
 - c. If I invest £7 000, how much will I have at the end of 5 years?
 - d. I ended up with £12915 after investing money for a year. How much did I start with?
 - e. How long will it take an investment of £4000 to double in value?

- 3) The temperatures in Edinburgh and London on 7 days in June 2025 were:

Edinburgh	7	7	10	10	9	13	13
London	13	13	14	15	15	18	21

- a) Compare the temperatures. (Think about averages and spread)
- 4) Estimate how many times your heart has beaten so far this year.
Show clearly how you reached your answer.
 - 5) Find the exchange rate between Pounds and Euros.
 - a) What is the current exchange rate between Pounds and Euros?
 - b) What was it this time last year?
 - c) A meal costs €12. Does this cost more or less Pounds than last year?
 - 6) A car costs £17 per day to hire, plus a £52 arranging fee.
 - a) How much does it cost to hire for 12 days?
 - b) How many days can I hire it for if I have £215 to spend?
 - c) How much does it cost to hire for n days?
 - 7) Sketch a graph to show how the price of buying a second hand car will change as the car gets older.
Label the axes and explain any important features of your graph.