



Oxford Cambridge and RSA

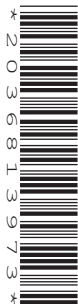
Friday 23 May 2025 – Afternoon

Level 3 Certificate Core Maths A (MEI)

H868/02 Critical Maths

Insert

Time allowed: 2 hours



INSTRUCTIONS

- Do **not** send this Insert for marking. Keep it in the centre or recycle it.

INFORMATION

- This Insert contains the pre-release material that you have already seen.
- This document has **4** pages.

A: Carbon dioxide (CO₂) emissions

Carbon dioxide, chemical formula CO₂, is a gas which can change the world's climate by trapping more heat in the atmosphere. This is known as the greenhouse effect, so carbon dioxide is sometimes referred to as a greenhouse gas.

Carbon dioxide is produced by burning fuels such as coal or petrol and in various industrial processes.

Statistics are collected about the carbon dioxide emissions of different countries.

These are often given in millions of tonnes per country per year.

Countries with larger populations tend to have larger CO₂ emissions as they have more cars, use more fuel for energy and have more industry than small countries.

CO₂ emissions are often reported per capita, for each person in the population. This allows a fairer comparison to be made between countries.

Data for a sample of countries for 2021 are shown below.

Country	Population	Annual CO ₂ emissions (million tonnes)	Total annual growth in CO ₂ emissions (million tonnes)	Annual CO ₂ emissions per capita (tonnes per person)
France	64 531 448	305.964	25.932	4.741
Lebanon	5 592 626	24.959	0.484	4.463
Malaysia	33 573 872	256.049	-3.432	7.626
Syria	21 324 366	27.001	0.841	1.266
Tonga	106 034	0.175	0.005	1.650
Venezuela	28 199 862	79.747	3.279	2.828

B: Free childcare for working parents

From September 2025, working parents of children aged nine months and upwards will be entitled to 30 hours free childcare per week until their child starts school.

The free hours can be used during school term time (38 weeks a year).

Parents who have used less than 30 hours a week of free childcare during term time can use the additional hours outside of term time.

Working parents can already get 30 hours free childcare for three and four-year-olds.

The free childcare for children under three is being phased in gradually.

The free childcare entitlement is only available to families who are earning between particular limits.

From April 2023 each parent/carer needs to earn more than £8670 but less than £100 000 a year.

For a child with two parents/carers, each of them must be earning between these limits.

The limits will increase over time.

It is estimated that the additional free childcare from September 2025 will increase government spending on free childcare from about £4 billion a year to about £8 billion a year. A billion is a thousand million.

Nurseries providing free childcare are paid an hourly rate for each child. This varies across the country. Funding rates per child from 1 September 2024 are an average of £5.98 an hour for three and four-year-olds and £10.02 per hour for under 3s.

Nurseries cannot charge parents receiving free childcare a top-up fee if their usual fees are more than the government funding.

Nurseries do not have to provide free childcare places – it is up to each provider to decide whether to take part in the scheme.

The scheme described above applies to England.

There are different schemes in the other countries of the UK.

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