



Aberdare Community School
Mathematics Department

WJEC GCSE

Higher – Calculator

Number

Compound interest and depreciation

Name:

Set:

Date:

Teacher:

8. Mal invests £5500 for 2 years at 6% per annum compound interest. What is the value of his investment after 2 years?

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8. Judith invests £600 for 2 years at 4% per annum compound interest. What is the value of her investment after 2 years?

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10. Theo invests £800 for 3 years at 5% per annum compound interest. How much money is in the account after 3 years?

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8. A business declares that, in each year, its office equipment depreciates at the rate of 18% of its value at the beginning of that year. Find, to the nearest £100, the value of its office equipment at the end of 3 years of depreciation, if its value at the beginning of the period was £35 000.

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10. (a) Sally invests £2500 for 2 years at 7% per annum compound interest.
What is the value of her investment after 2 years?

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8. Mal invests £5500 for 2 years at 6% per annum compound interest. What is the value of his investment after 2 years?

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- (c) The garden centre buys a delivery van at a cost of £6500.
Each year, the value of the van depreciates by 12% of its value at the start of the year.
At the end of two years by how much has the value of the van depreciated?

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6. (a) Michael bought a scooter for £800 on 1st January 2008.
Every year the value of the scooter depreciates by 5% of its value at the start of the year.
Find the value of the scooter on 1st January 2010.

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7. (a) Terry invests £600 for 2 years at 4% per annum compound interest.
How much money is in the account after 2 years?

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(b) Find the compound interest, to the nearest penny, when £6000 is invested for 3 years at 4% per annum.

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- 5. Sian invests £7000 for 3 years at 4% per annum compound interest.
Find the compound interest earned in the 3 years.

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(c) Aaron bought a bike for £600 on 1st February 2010.
Every year the value of the bike depreciates by 12% of its value at the start of the year.
Find the value of the bike on 1st February 2012.

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(c) Kim bought a scooter for £1600 on 1st January 2010.
Every year the value of the scooter depreciates by 8% of its value at the start of the year.
Find the value of the scooter on 1st January 2012.

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(c) A leather sofa costs £2400.
Each year, the value of furniture depreciates by 18% of its value at the start of the year.
At the end of two years, by how much has the value of the leather sofa depreciated?

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6. The manager of an electrical store had a plan to gradually decrease the number of ordinary light bulbs, on the shelves, between 2005 and 2011.

At the same time, the plan was to increase the number of low energy light bulbs on the shelves.

The number of both types of light bulbs, on the shelves, has followed the general trends as planned.

There were no variations to the trend.

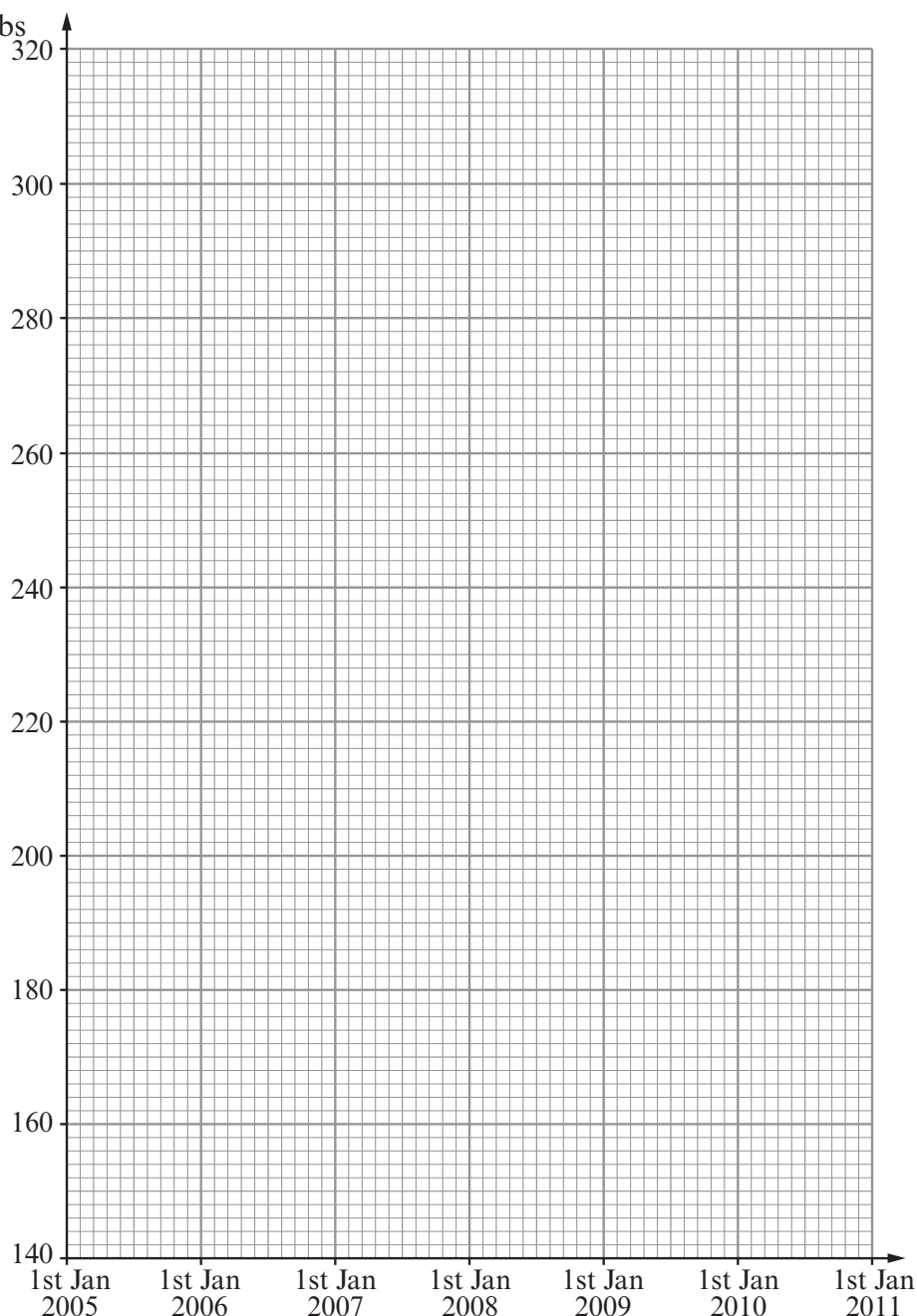
- (a) The number of low energy light bulbs was recorded each year on the 1st January. The table gives this information from 2005 to 2011.

1st January, Year	2005	2006	2007	2008	2009	2010	2011
Number of low energy light bulbs	150	172	198	248	300	310	320

- (i) Use the graph paper below to display this information.

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Number of low energy light bulbs



- (ii) Use the information given to write down a reasonable estimate for the number of low energy light bulbs, on the shelves, on 1st July 2008.
You can assume that, within each year, the number of low energy light bulbs on the shelves increases at a steady rate.

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- (b) The number of ordinary light bulbs, on the shelves, halved every year between 1st January 2005 and 1st January 2011.
On 1st January 2005 there were 640 ordinary light bulbs on the shelves.
Find in which year and in which quarter of the year (1st, 2nd, 3rd or 4th) there were approximately an equal number of ordinary and low energy light bulbs on the shelves.
You must show all your working.
You can assume that, within each year, the numbers of low energy light bulbs and ordinary light bulbs on the shelves both change at a steady rate.

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6. Heather invests £9000 for 3 years at 5% per annum compound interest.
Find the compound interest earned in the 3 years.

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4. Grace invests £8240 for 2 years at 3% per annum compound interest.
Find the compound interest earned in the 2 years.
Your answer should be given correct to the nearest penny.

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10.

- (ii) Ffion decides to open a **Gold** savings account on the 1st May.
The interest is paid at a rate of 0.3% per month.
She invests £200 in the account.
She leaves the account without withdrawing from or making payments into her account for 5 months.
Calculate the balance that would be shown on Ffion's **Gold** savings account statement after this five-month period. [3]

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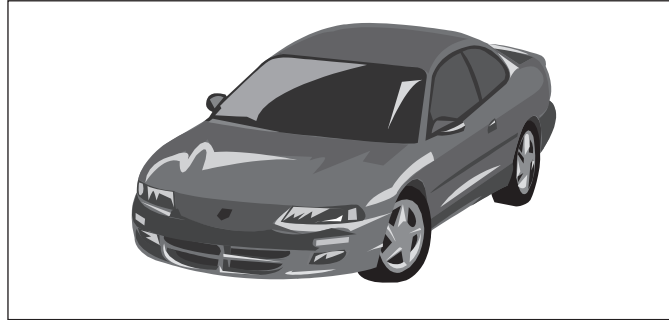
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(d) Boris bought a car in Moscow for 251 850 Russian roubles.



(i) Each year, the value of Boris's car depreciates by 10% of its value at the start of the year.
At the end of two years, by how much has the value of Boris's car depreciated? [4]

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6. Eleri invests £3700 for 3 years at 2% per annum compound interest.
Calculate the value of her investment at the end of the 3 years.
Give your answer correct to the nearest penny.

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