

# Managing Money

## Tips for Revising

- Make sure you *know what you will be tested on*. The main topics are listed below. The examples show you what to do.
- List the topics and *plan a revision timetable*.
- *Always revise actively* by working through questions. Look at the examples when you need to. Tick each topic when you have revised it – this will help you feel more positive!
- Try lots of *past papers* – you can download them from the AQA website at [www.aqa.org.uk](http://www.aqa.org.uk)
- When you get the Data Sheet, think about *what questions might be asked*. Practise them.

## Tips for the exam

- **Don't panic!**  
Easier said than done! – but try to stay calm. It will help you think more clearly.
- **Read each question carefully.** Underline important information if it helps.
- If you have time left at the end, **check your answers**.  
If you decide to change an answer, cross out the old answer.

The methods that you need are listed below. You will have a calculator in the exam, so most of the examples show how to use a calculator to solve the problems, rather than other methods.

Fractions	Examples
<p><b>To write something as a fraction:</b></p> <ul style="list-style-type: none"> <li>• think of it as '<i>... out of ...</i>'  <div style="display: flex; justify-content: space-around; margin-left: 40px;"> <span>top of fraction ↗</span> <span>↖ bottom</span> </div> </li> <li>• simplify the fraction by dividing top and bottom by the same numbers (or using your calculator)</li> </ul> <p>To write amounts of money as a fraction, <b>they must be in the same units</b> i.e. both in pence or both in £</p>	<p><b>Helen saves £120 out of her earnings of £400.</b> <b>What fraction is this?</b></p> <div style="display: flex; align-items: center; justify-content: center;"> <math display="block">\frac{120}{400} = \frac{12}{40} = \frac{3}{10}</math> <div style="margin-left: 20px;"> <p>Instead of ÷ 4 you could ÷ 2 then ÷ 2 again</p> <p>On a calculator press: 120 a<sup>b/c</sup> 400 =</p> </div> </div> <p><b>Josh has £5. He spends 75p on a pen.</b> <b>What fraction is this?</b></p> <div style="display: flex; align-items: center; justify-content: center;"> <math display="block">\frac{75}{500} = \frac{3}{20}</math> <div style="margin-left: 20px;"> <p>On a calculator press: 75 a<sup>b/c</sup> 500 =</p> </div> </div>
<p><b>To find a fraction of something:</b></p> <ul style="list-style-type: none"> <li>• divide it by the bottom number (denominator)</li> <li>• then multiply by the top number (numerator).</li> </ul>	<p><b>A company invests <math>\frac{2}{5}</math> of its profits of £36 000.</b> <b>How much does it invest?</b></p> <p>On a calculator: <math>36\ 000 \div 5 \times 2 = \mathbf{£14\ 400}</math></p>



Decimals	Examples
<p><b>To change a decimal to a fraction:</b> use the place value of the last digit</p>	<div style="display: flex; align-items: center; justify-content: center;"> <div style="text-align: center;"> <math display="block">0.85 = \frac{85}{100} = \frac{17}{20}</math> <p>↑ hundredths</p> </div> <div style="margin: 0 20px;"> <math>\div 5</math> ↻ <math>\div 5</math> </div> <div style="border: 1px solid black; background-color: yellow; padding: 5px; text-align: center;"> <p>On a calculator press:</p> <math>85 \ a^{b/c} \ 100 =</math> </div> </div>
<p><b>To change a fraction to a decimal:</b> divide the top by the bottom</p>	$\frac{4}{5} = 4 \div 5 = 0.8$
<p><b>To put decimals in order of size:</b> it is useful to add 0s so they have the same number of decimal places.</p>	<p><i>Put these decimals in order of size, starting with the smallest: 1.2, 0.56, 1.08, 1.15, 0.9</i></p> <p>Writing them all with 2dp: 1.20, 0.56, 1.08, 1.15, 0.90 The correct order is: <b>0.56, 0.9, 1.08, 1.15, 1.2</b></p>
<p><b>Solving money problems by adding, subtracting, multiplying or dividing decimals:</b></p> <p>Take care to:</p> <ul style="list-style-type: none"> <li>• use the same units</li> <li>• put in zeros where necessary</li> <li>• round the final answer if necessary</li> </ul> <p>If in doubt, think what you would do with easier numbers (eg for 4 kg of cheese, the cost would be <math>4 \times 6.48</math>).</p>	<p><i>Rob pays for a newspaper that costs 80p with a £5 note. What change should he get?</i></p> $5 - 0.80 = 4.2$ <div style="border: 1px solid black; background-color: yellow; padding: 2px; display: inline-block;">To find change, subtract.</div> <p>Add a zero to give the answer <b>£4.20</b></p> <p><i>How much does it cost for 0.4kg of cheese at £6.49 per kilogram?</i></p> $0.4 \times 6.49 = 2.596 = \mathbf{£2.60}$ <div style="border: 1px solid black; background-color: yellow; padding: 2px; display: inline-block;">Round the pence up when the next figure is 5 or more.</div> <p><i>Pencils cost 29p each.</i></p> <p>a) <i>How many can you buy with £7.20?</i></p> $7.20 \div 0.29 = 24.827\dots$ <p>You can buy <b>24</b> pencils.</p> <div style="border: 1px solid black; background-color: yellow; padding: 2px; display: inline-block;">Here round down – you haven't got enough for 25 pencils.</div> <p>b) <i>How much do you have left?</i></p> <p>Amount spent = <math>24 \times 0.29 = \mathbf{£6.96}</math> Amount left = <math>7.20 - 6.96 = \mathbf{£0.24}</math> or 24 pence</p>
Ratios	Examples
<p><b>To divide in a ratio:</b></p> <ul style="list-style-type: none"> <li>• divide the quantity by the <i>total number of parts</i>.</li> <li>• multiply (if necessary) to find the answer.</li> </ul>	<p><i>Two flatmates, Neil and Kate, get a phone bill for £96. They divide the cost in the ratio 1 : 3 with Kate paying the most. How much does Kate pay?</i></p> <p>Total number of parts = <math>1 + 3 = 4</math> One part = <math>96 \div 4 = 24</math> Kate pays <math>3 \times 24 = \mathbf{£72}</math></p>

Percentages	Examples
<p><b>To write a % as a fraction or decimal, divide by 100</b></p>	<p><math>64\% = 64 \div 100 = 0.64</math></p> <p><math>64\% = \frac{64}{100} = \frac{16}{25}</math></p> <div style="border: 1px solid black; background-color: #FFD700; padding: 5px; display: inline-block;"> <p>On a calculator press: <math>64 \ a \ b / c \ 100 =</math></p> </div>
<p><b>To write a decimal or fraction as a % multiply by 100</b></p>	<p><math>0.125 = 0.125 \times 100 = 12.5\%</math></p> <p><math>\frac{2}{5} = \frac{2}{5} \times 100</math> (i.e. <math>\frac{2}{5}</math> of 100)</p> <p><math>2 \div 5 \times 100 = 40\%</math></p> <div style="border: 1px solid black; background-color: #FFD700; padding: 5px; display: inline-block;"> <p>or <math>2 \ a \ b / c \ 5 \times 100 = 40\%</math></p> </div>
<p><b>To write one quantity as a percentage of another:</b></p> <ul style="list-style-type: none"> <li>write as a fraction</li> <li>then multiply by 100 to change to a percentage.</li> </ul> <p>N.B. They must be in the <i>same units</i>.</p>	<p><i>A tourist pays £54 deposit on a holiday that costs £450. What is the deposit as a % of the price?</i></p> <p><math>\frac{54}{450} \times 100</math></p> <p><math>54 \div 450 \times 100 = 12\%</math></p> <div style="border: 1px solid black; background-color: #FFD700; padding: 5px; display: inline-block;"> <p>or <math>54 \ a \ b / c \ 450 \times 100 = 12\%</math></p> </div>
<p><b>To write an increase/decrease as a %</b></p> <p>% increase = <math>\frac{\text{increase}}{\text{original amount}} \times 100</math></p> <p>% decrease = <math>\frac{\text{decrease}}{\text{original amount}} \times 100</math></p>	<p><i>A bus fare costing £1.75 is increased to £1.85. What is the % increase?</i></p> <p>Increase = <math>1.85 - 1.75 = 0.1</math> (i.e. 10 pence)</p> <p>% increase = <math>0.1 \div 1.75 \times 100 = 5.714\dots = 5.7\%</math> (1dp)</p> <p><i>A shirt costing £11.50 is reduced to £9.20 in a sale. What is the % reduction?</i></p> <p>Reduction = <math>11.50 - 9.20 = 2.3</math> (i.e. £2.30)</p> <p>% reduction = <math>2.3 \div 11.50 \times 100 = 20\%</math></p>
<p><b>To work out a % of something:</b></p> <ul style="list-style-type: none"> <li>divide by 100 to find 1%</li> <li>then multiply by the % you need</li> </ul>	<p><i>Find 35% of £16.40</i></p> <p><math>\pounds 16.40 \div 100 \times 35 = \pounds 5.74</math></p> <p><i>A coat costing £74.99 is reduced by 25% in a sale. What is the reduction?</i></p> <p><math>\pounds 74.99 \div 100 \times 25 = \pounds 18.7475 = \pounds 18.75</math> (nearest p)</p>
<p><b>To find the final amount:</b></p> <ul style="list-style-type: none"> <li>add an increase <i>or</i></li> <li>subtract a decrease (reduction)</li> </ul> <p>Read the question carefully - it may want just the increase (or decrease) or the final amount.</p>	<p><i>A builder charges £488 plus VAT at <math>17\frac{1}{2}\%</math> for a job. What is the price including VAT?</i></p> <p>VAT = <math>17.5\%</math> of <math>\pounds 488 = \pounds 488 \div 100 \times 17.5 = 85.4</math></p> <p>Total price = <math>85.4 + 488 = \pounds 573.40</math></p>



Compound Interest	Examples
<p><b>For compound interest:</b></p> <ul style="list-style-type: none"> <li>work out the interest for the 1<sup>st</sup> time period</li> <li>add it on, to find the new amount</li> <li>work out the interest for the 2<sup>nd</sup> time period and add it on ...etc.</li> </ul> <p>You may be given a table or spreadsheet to complete.</p>	<p><i>Rory deposits £2000 in an account. It earns compound interest at the rate of 2.14% paid every 6 months. How much will be in the account after 18 months.</i></p> <p><b>1<sup>st</sup> 6 months:</b> Interest = <math>2000 \div 100 \times 2.13 = £42.60</math> Amount = <math>£42.60 + £2000 = £2042.60</math></p> <p><b>2<sup>nd</sup> 6 months:</b> Interest = <math>2042.60 \div 100 \times 2.13 = £43.51</math> Amount = <math>£43.51 + £2042.60 = £2086.11</math></p> <p><b>3<sup>rd</sup> 6 months:</b> Interest = <math>2086.11 \div 100 \times 2.13 = £44.43</math> Amount = <math>£44.43 + £2086.11 = \mathbf{£2130.54}</math></p>
Rounding	Examples
<ul style="list-style-type: none"> <li>If the <i>next</i> figure is <b>5 or more</b>, round up</li> <li>If the <i>next</i> figure is <b>less than 5</b>, round down</li> </ul>	<p><i>On one day, a shop's takings were £873.65. Express these takings:</i></p> <p>(a) to the nearest £100                      (b) to the nearest £10 (c) to the nearest £1                          (d) to the nearest 10 pence</p> <p>(a)    £873.65 = £900 to nearest £100</p> <p>(b)    £873.65 = £870 to nearest £10</p> <p>(c)    £873.65 = £874 to nearest £1</p> <p>(d)    £873.65 = £873.70 to nearest 10 pence</p>
Approximations	Examples
<p><b>To find an approximate value of a calculation:</b> round all numbers to 1 significant figure, then do the calculation.</p>	<p><i>Jackie paid £1.95 for 36 postcards. Using approximations, estimate the average cost per postcard.</i></p> <div style="border: 1px solid black; background-color: yellow; padding: 5px; width: fit-content; margin: 10px auto;">       Round 195p to 200p and 36 to 40     </div> <p>Average cost per postcard <math>\approx \frac{200}{40} = \mathbf{5 \text{ pence each}}</math></p>
Spreadsheet formulas	Examples
<p><b>To multiply use *</b> <b>To divide use /</b></p>	<p>To add A3 and B3                      =A3+B3 To subtract A3 from B3                =B3-A3 To multiply A3 and B3                 =A3*B3 To divide A3 by B3                      =A3/B3</p>
Best Buys	Examples
<p><b>Find and compare the cost per item.</b></p> <p>You may be given a table or spreadsheet to complete.</p>	<p><i>A large pack contains 20 pencils and costs £1.99. A giant pack contains 50 pencils and costs £4.69. Which of these gives the best value for money?</i></p> <p>Large pack:    Cost per pencil = <math>199 \div 20 = 9.95</math> pence Giant pack:    Cost per pencil = <math>469 \div 50 = 9.38</math> pence</p> <p>9.38 is less than 9.95 so the <b>giant pack gives the best value for money.</b></p>

Note you may be asked to fill in an **order form** and/or use a **bank statement**.

You may also need to draw or interpret statistical diagrams.

Pictograms	Example																																								
<p><b>To draw a pictogram:</b></p> <ul style="list-style-type: none"> <li>Choose a symbol to use (use one that's easy to draw)</li> <li>Decide how many items the symbol should represent (1, 2, 5, 10, 20, 50, 100 etc). Include a key to show this.</li> <li>Draw symbols to show the number in each category (making sure they are lined up neatly).</li> <li>Remember to give the pictogram a title to say what it is about.</li> </ul>	<p><i>Student's budget for a holiday:</i></p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Category</th> <th>Amount</th> </tr> </thead> <tbody> <tr> <td>Hotel</td> <td>£120</td> </tr> <tr> <td>Food</td> <td>£80</td> </tr> <tr> <td>Transport</td> <td>£50</td> </tr> <tr> <td>Other</td> <td>£70</td> </tr> </tbody> </table> <p>The pictogram below shows this information.</p> <p style="text-align: center;"><b>Student Holiday Budget</b></p> <table style="margin-left: auto; margin-right: auto;"> <tbody> <tr> <td>Hotel</td> <td>£</td><td>£</td><td>£</td><td>£</td><td>£</td><td>£</td> </tr> <tr> <td>Food</td> <td>£</td><td>£</td><td>£</td><td>£</td> <td colspan="3"></td> </tr> <tr> <td>Transport</td> <td>£</td><td>£</td><td>£</td> <td colspan="4"></td> </tr> <tr> <td>Other</td> <td>£</td><td>£</td><td>£</td><td>£</td> <td colspan="2"></td> </tr> </tbody> </table> <p style="text-align: right;">Key: <span style="border: 1px solid black; padding: 0 2px;">£</span> = £20</p>	Category	Amount	Hotel	£120	Food	£80	Transport	£50	Other	£70	Hotel	£	£	£	£	£	£	Food	£	£	£	£				Transport	£	£	£					Other	£	£	£	£		
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Pie Charts	Example																																								
<p><b>To draw a pie chart:</b></p> <ul style="list-style-type: none"> <li>Find the total.</li> <li>Divide <math>360^\circ</math> by the total to find the angle per £ or item.</li> <li>Multiply by the amount in each category to find the angles.</li> <li>Check the angles add to <math>360^\circ</math>. (If rounding makes the sum <math>359^\circ</math> or <math>361^\circ</math>, adjust the angle of the biggest sector to make the total <math>360^\circ</math>.)</li> <li>Draw the pie chart. Remember to include the title and labels (or a key).</li> </ul> <p><b>Note</b> If the data is given in %, the angle for each % is <math>360^\circ \div 100 = 3.6^\circ</math> So <b>multiply the % for each category by 3.6 to find the angles.</b></p>	<p><i>Household's expenditure in a week:</i></p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Category</th> <th>Amount</th> <th>Angle (nearest <math>^\circ</math>)</th> </tr> </thead> <tbody> <tr> <td>Food &amp; clothing</td> <td>£76</td> <td><math>76 \times 1.25^\circ = 95^\circ</math></td> </tr> <tr> <td>Household</td> <td>£69</td> <td><math>69 \times 1.25^\circ = 86^\circ</math></td> </tr> <tr> <td>Transport</td> <td>£44</td> <td><math>44 \times 1.25^\circ = 55^\circ</math></td> </tr> <tr> <td>Recreation</td> <td>£56</td> <td><math>56 \times 1.25^\circ = 70^\circ</math></td> </tr> <tr> <td>Other</td> <td>£43</td> <td><math>43 \times 1.25^\circ = 54^\circ</math></td> </tr> <tr> <td style="text-align: right;"><b>Total</b></td> <td><b>£288</b></td> <td><b>(check) <math>360^\circ</math></b></td> </tr> </tbody> </table> <p>Total = £288 So angle for each £ is <math>360^\circ \div 288 = 1.25^\circ</math></p> <p style="text-align: center;"><b>Household's expenditure in a week</b></p>	Category	Amount	Angle (nearest $^\circ$ )	Food & clothing	£76	$76 \times 1.25^\circ = 95^\circ$	Household	£69	$69 \times 1.25^\circ = 86^\circ$	Transport	£44	$44 \times 1.25^\circ = 55^\circ$	Recreation	£56	$56 \times 1.25^\circ = 70^\circ$	Other	£43	$43 \times 1.25^\circ = 54^\circ$	<b>Total</b>	<b>£288</b>	<b>(check) <math>360^\circ</math></b>																			
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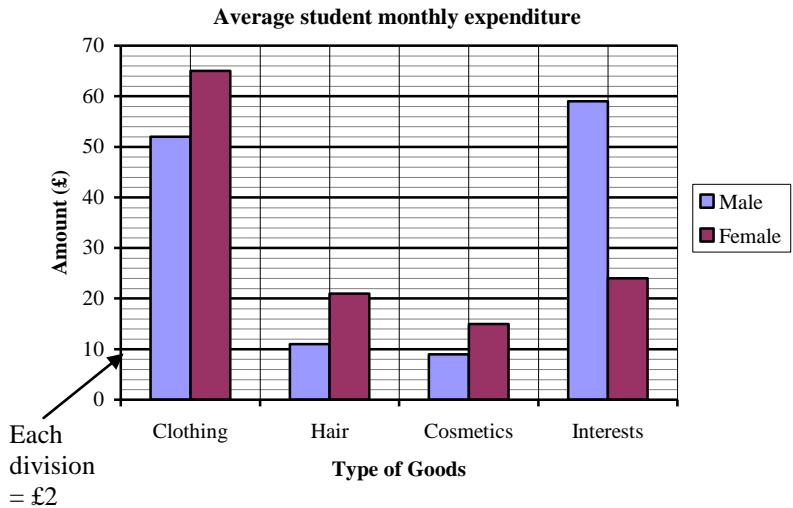
**Bar Charts** **Example**

**To draw a bar chart:**

- **Horizontal axis**  
Decide how to fit a bar for each category into the available space.
- **Vertical axis**  
Use a scale that will reach the highest value. Choose an easy scale like 1, 2, 5, 10, 20, 50, 100, 200, 500, 1000, ...
- Draw the bars the right height and label them. If there is more than one set of data, include a key.
- Include a title to say what the chart shows.

*Average amounts spent per month by male & female students:*

Type of Goods	Male	Female
Clothing	£52	£65
Hair	£11	£21
Cosmetics	£9	£15
Interests	£59	£24



**Line Graphs** **Example**

These are often used to show how something changes with time.

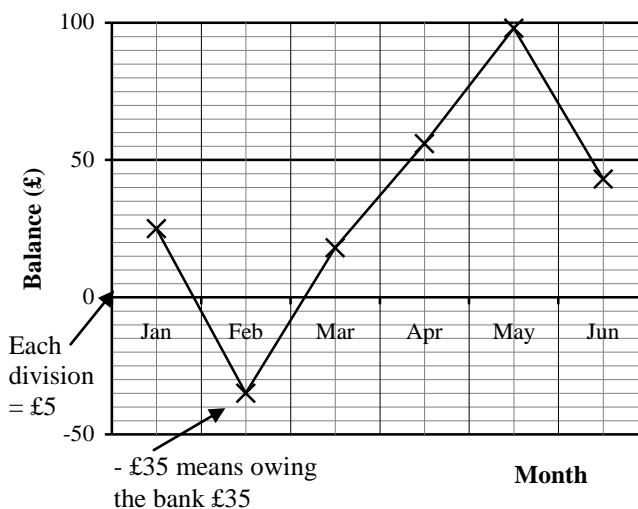
**To draw a line graph:**

- If one of the variables is *time*, put it on the *horizontal* axis.
- For the vertical axis, decide on a scale that will cover the lowest and highest values. Choose easy scales like 1, 2, 5, 10, 20, 50, 100, 200, 500, ...
- Plot and join the points with straight lines.
- Include a title to say what the chart shows.

*Student's bank balance each month over a 6 month period*

Month	Balance
Jan	£25
Feb	- £35
Mar	£18
Apr	£56
May	£98
Jun	£43

**Bank balance over a 6 month period**



This line graph shows the balance fell at first and the student owed £35 in February. Then the balance rose reaching £98 in May before falling again.

