Kristian and Stephanie share some money in the ratio 3 : 2. Kristian receives $72.

(i) Work out how much Stephanie receives.

$ ........................................... [2]

(ii) Kristian spends 45% of his $72 on a computer game.

Calculate the price of the computer game.

$ ........................................... [1]

(iii) Kristian also buys a meal for $8.40.

Calculate the fraction of the $72 Kristian has left after buying the computer game and the meal. Give your answer in its lowest terms.

........................................... [2]

(iv) Stephanie buys a book in a sale for $19.20. This sale price is after a reduction of 20%.

Calculate the original price of the book.
2. (0580-S 2016-Paper 4/2-Q1)

Mr Chan flies from London to Los Angeles, a distance of 8800 km. The flight takes 11 hours and 10 minutes.

(a) (i) His plane leaves London at 0935 local time. The local time in Los Angeles is 8 hours behind the time in London. Calculate the local time when the plane arrives in Los Angeles.

............................................................................. [2]

(ii) Work out the average speed of the plane in km/h.

............................................................................. km/h [2]

(b) There are three types of tickets, economy, business and first class. The price of these tickets is in the ratio economy : business : first class = 2 : 5 : 9.

(i) The price of a business ticket is $2350. Calculate the price of a first class ticket.

$............................................................................. [2]

(ii) Work out the price of an economy ticket as a percentage of the price of a first class ticket.

.............................................................................% [1]

(c) The price of a business ticket for the same journey with another airline is $2240.

(i) The price of a first class ticket is 70% more than a business ticket. Calculate the price of this first class ticket.

$............................................................................. [2]
3. (0580-S 2016-Paper 4/3-Q1)

A football club sells tickets at different prices dependent on age group.

(a)  (i) At one game, the club sold tickets in the ratio

\[ \text{under 18 : 18 to 60 : over 60} = 2 : 7 : 3. \]

There were 6100 tickets sold for people aged under 18.

Calculate the total number of tickets sold for the game.

................................................................................. [3]

(ii) Calculate the percentage of tickets sold for people aged under 18.

.................................................................................% [1]

(b) The table shows the football ticket prices for the different age groups.

<table>
<thead>
<tr>
<th>Age</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 18</td>
<td>$15</td>
</tr>
<tr>
<td>18 to 60</td>
<td>$35</td>
</tr>
<tr>
<td>Over 60</td>
<td>$18</td>
</tr>
</tbody>
</table>

At a different game there were 42 600 tickets sold.

- 14\% were sold to people aged under 18
- \( \frac{2}{3} \) of the tickets were sold to people aged 18 to 60
- The remainder were sold to people aged over 60

Calculate the total amount the football club receives from ticket sales for this game.

$ ....................................................................... [5]
4. (0580-W 2016-Paper 4/1-Q1)

(a) (i) Divide $105 in the ratio 4 : 3.

$ ................... and $ ................... [2]

(ii) Increase $105 by 12%.

$ .................................. [2]

(iii) In a sale the original price of a jacket is reduced by 16% to $105.

Calculate the original price of the jacket.

$ .................................. [3]

(b) Jakob invests $500 at a rate of 2% per year compound interest.
Claudia invests $500 at a rate of 2.5% per year simple interest.

Calculate the difference between these two investments after 30 years.
Give your answer in dollars correct to the nearest cent.

$ .................................. [6]
5. (0580-W 2016-Paper 4/2-Q1)
(a) (i) Each year the value of a car decreases by 15% of its value at the beginning of that year. Alberto buys a car for $18000.

Calculate the value of Alberto’s car after 3 years.

S ................................................. [2]

(ii) Belinda bought a car one year ago. The value of this car has decreased by 15% to $14025.

Calculate how much Belinda paid for the car.

S ................................................. [3]

(b) Chris invested some money at a rate of 5% per year compound interest. After 2 years the value of this investment is $286.65.

Calculate how much Chris invested.

S ................................................. [3]
6. (0580-W 2016-Paper 4/3-Q1) 

(a) A jigsaw puzzle has edge pieces and inside pieces. 
   The ratio edge pieces : inside pieces = 3 : 22. 
   (i) There are 924 inside pieces. 
      Calculate the total number of pieces in the puzzle. 

   ................................................... [2] 

(ii) Find the percentage of the total number of pieces that are edge pieces. 

   ...................................................% [1] 

(iii) Anjum and Betty spent a total of 9 hours completing the puzzle. 
      The ratio Anjum’s time : Betty’s time = 7 : 5. 
      Work out how much time Anjum spent on the puzzle. 

   ................................................... hours [2] 

(b) The price of the puzzle was $15.99 in a sale. 
    This was 35% less than the original price. 
    Calculate the original price of the puzzle. 

   $.................................................. [3]
7. (0580-W 2016-Paper 4/2-Q7)

(a) \( S1 = 3.67 \) dirhams

Calculate the value, in dollars, of 200 dirhams.
Give your answer correct to 2 decimal places.

\[ \text{\$...}[2] \]

(b) (i) Write as a single fraction, in its simplest form.

\[ \frac{1000}{x} - \frac{1000}{x + 1} \]

\[ \text{.................................}[3] \]

(ii) One day in 2014, 1 euro was worth \( x \) rand.
One year later, 1 euro was worth \( (x + 1) \) rand.

Winston changed 1000 rand into euros in both years.
In 2014 he received 4.50 euros more than in 2015.

Write an equation in terms of \( x \) and show that it simplifies to

\[ 9x^2 + 9x - 2000 = 0. \]
8. (0580-5 2017-Paper 4/1-Q1)

An energy company charged these prices in 2013.

<table>
<thead>
<tr>
<th>Electricity price</th>
<th>Gas price</th>
</tr>
</thead>
<tbody>
<tr>
<td>23.15 cents per day</td>
<td>24.5 cents per day</td>
</tr>
<tr>
<td>plus 13.5 cents for each unit used</td>
<td>plus 5.5 cents for each unit used</td>
</tr>
</tbody>
</table>

(a)  (i) In 90 days, the Siddique family used 1885 units of electricity.

Calculate the total cost, in dollars, of the electricity they used.

$ ........................................ [2]

(ii) In 90 days, the gas used by the Khan family cost $198.16.

Calculate the number of units of gas used.

........................................ units [3]

(b) In 2013, the price for each unit of electricity was 13.5 cents.
Over the next 3 years, this price increased exponentially at a rate of 8% per year.

Calculate the price for each unit of electricity after 3 years.

........................................ cents [2]

(c) Over these 3 years, the price for each unit of gas increased from 5.5 cents to 7.7 cents.

(i) Calculate the percentage increase from 5.5 cents to 7.7 cents.

........................................ % [3]
9. (0580-5 2017-Paper 4/2-Q1)

(a) Annie and Dermot share $600 in the ratio 11 : 9.

(i) Show that Annie receives $330.

(ii) Find the amount that Dermot receives.

$ .................................................. [1]

(b) (i) Annie invests $330 at a rate of 1.5% per year compound interest.

Calculate the amount that Annie has after 8 years.
Give your answer correct to the nearest dollar.

$ .................................................. [3]

(ii) Find the amount of interest that Annie has, after the 8 years, as a percentage of the $330.

.................................................. % [2]
10. (0580-S 2017-Paper 4/3-Q1)

(a) In 2016, a company sold 9600 cars, correct to the nearest hundred.

(i) Write down the lower bound for the number of cars sold.

............................................. [1]

(ii) The average profit on each car sold was $2430, correct to the nearest $10.

Calculate the lower bound for the total profit.
Write down the exact answer.

$............................................. [2]

(iii) Write your answer to part (a)(ii) correct to 4 significant figures.

$............................................. [1]

(iv) Write your answer to part (a)(iii) in standard form.

$............................................. [1]

(b) In April, the number of cars sold was 546.
This was an increase of 5% on the number of cars sold in March.

Calculate the number of cars sold in March.

............................................. [3]