

Use of Mathematics

43503H/PM

Core unit

Preliminary Material Data Sheet

To be opened and issued to candidates between Monday 28 April 2014 and Monday 12 May 2014

REMINDER TO CANDIDATES

YOU MUST **NOT** BRING THIS DATA SHEET WITH YOU WHEN YOU SIT THE EXAMINATION. A CLEAN COPY WILL BE MADE AVAILABLE.

UK family spending

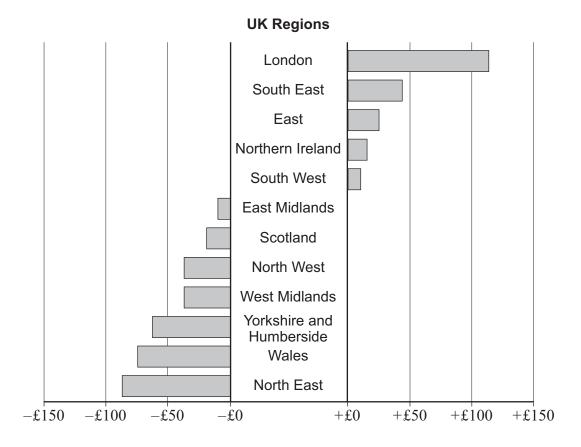
In 2010, the mean family spending in the UK was £473.60 per week.

Family spending is divided into different categories. The table below shows the mean of the amounts spent in 2010 for each of these categories.

Category	£ per week
Transport	64.90
Housing, fuel and power	60.40
Recreation and culture	58.10
Food and drink	53.20
Restaurants and hotels	39.20
Miscellaneous goods and services	35.90
Household goods and services	31.40
Clothing and footwear	23.40
Communications	13.00
Alcohol and tobacco	11.80
Education	10.00
Health	5.00
Other	67.30
Total	473.60

For the three years 2008, 2009 and 2010, the mean family spending was £467 per week.

The mean family spending of $\pounds 467$ per week is the mean for the whole of the UK. People in some regions spend more than this and people in other regions spend less than this. The comparison is shown by the chart below.



Turn over

Postage rates

In May 2012, the cost of posting letters and packets was as shown.

1st and 2nd Class mail

Weight	1st Class	2nd Class
Small Letter – Max. 240 mm (L) \times 165 mm (W) \times 5 mm (D)		
0 – 100 g	60 p	50 p
Large Letter – Max. 353 mm (L) \times 250 mm (W) \times 25 mm (D)		
0 – 100 g	90 p	69 p
101 – 250 g	£1.20	£1.10
251 – 500 g	£1.60	£1.40
501 – 750 g	£2.30	£1.90
Packet – Over 353 mm (L) \times 250 mm (W) \times 25 mm (D)		
0 – 750 g	£2.70	£2.20
751 – 1000 g	£4.30	£3.50
1001 – 1250 g	£5.60	
1251 – 1500 g	£6.50	
1501 – 1750 g	£7.40	Items heavier than
1751 – 2000 g	£8.30	1000 g cannot be sent 2nd Class
2001 – 4000 g	£10.30	
Each additional 2000 g or part thereof	£3.50	

The cost of posting parcels was as shown.

Parcels

Weight up to	Price
2000 g	£5.30
4000 g	£8.80
6000 g	£12.30
8000 g	£15.80
10 000 g	£18.80
20 000 g	£21.90

First or Second Class mail may be posted using recorded delivery.

The cost of this service in May 2012 was an additional 95 p per item.

Rectangular paper sizes

The largest B series paper size is B0. Its dimensions are $141.4\ cm$ long by $100\ cm$ wide.

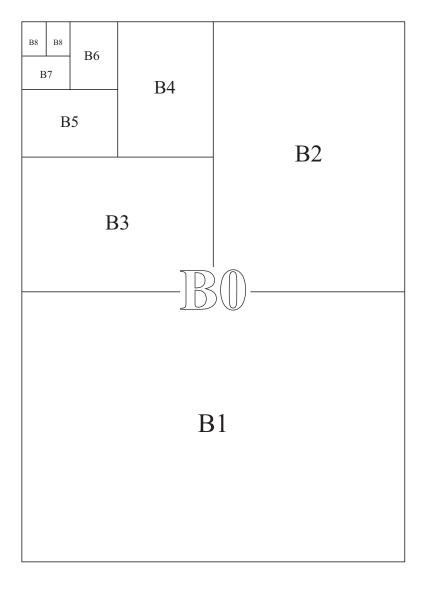
The smallest size is B10. Its dimensions are 4.4 cm by 3.1 cm.

A sheet of B1 size paper is obtained by folding a B0 size sheet in half along its longest edge.

The same method is used to obtain a B2 size sheet of paper from a B1 size sheet.

In the same way, a B3 size sheet is obtained from a B2 size and so on, with a B10 size sheet being obtained from a B9 size sheet.

These relationships are shown in the diagram, which is not to scale.

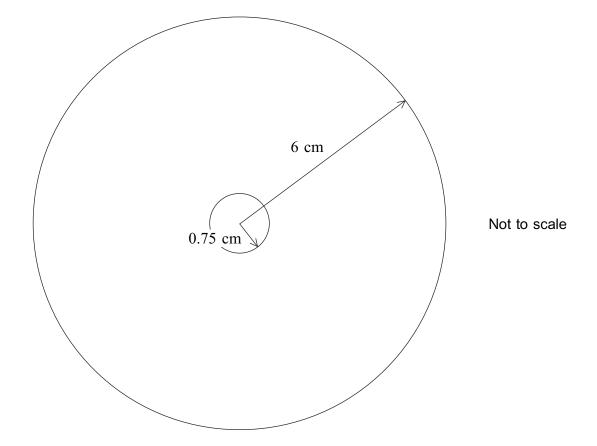


Compact discs

Compact discs, or CDs, are circular and can be used to store data files.

The two most common sizes of compact discs have radii $6~\rm cm$ and $4~\rm cm$. Both of these compact discs have a central hole with a radius of $0.75~\rm cm$.

The diagram below shows a 6 cm radius compact disc.



Writing desk

A photograph of a writing desk is shown.



When the legs are ignored, the desk is in the shape of a prism.

It is 30 inches long and 40 inches tall.

END OF DATA SHEET

There are no data printed on this page

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