| Centre No. | | | | | | Paper Reference | | | | | | | | Surname | Initial(s) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Candidate No. | | | | | | F | M | 1 | 0 | 1 | / | 0 | 1 | Signature | |

Paper Reference(s)

**FM101/01**

Examiner's use only

| | | |
|---|---|---|
| | | |

Team Leader's use only

| | | |
|---|---|---|
| | | |

# Edexcel Functional Skills

## Mathematics

Level 1

Tuesday 27 January 2009 – Morning

Time: 1 hour 15 minutes

**Materials required for examination**

Ruler graduated in centimetres and millimetres, protractor, pen, HB pencil, eraser, calculator.

**Items included with question papers**

Nil

### Instructions to Candidates

In the boxes above, write your centre number, candidate number, your surname, initials and signature.
Check that you have the correct question paper.
Answer ALL the tasks and questions. Write your answers in the spaces provided in this question paper.
If you need more space to complete your answer to any question, use additional answer sheets.

### Information for Candidates

The marks for individual questions and the parts of questions are shown in round brackets: e.g. **(2)**.
In this question paper there are 4 questions in Task 1, 5 questions in Task 2, and 6 questions in Task 3.
The total mark for this paper is 60.
There are 20 pages in this question paper. Any blank pages are indicated.
**Calculators may be used.**

### Advice to Candidates

Show all stages in any calculations.
Work steadily through the paper. Do not spend too long on one question.
If you cannot answer a question, leave it and attempt the next one.
Return at the end to those you have left out.

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## TASK 1: TELEVISION ADVERTISING

**Answer all four questions in this task.**

**Write your answers in the spaces provided.**

**You must write down all stages in your working.**

**1.** Sally collects information about television channels and television adverts.

The table below shows annual viewing percentages from 2000 to 2007

**Annual viewing percentages 2000 – 2007**

| Year | CHANNEL | | | | | |
|---|---|---|---|---|---|---|
| | **BBC1** | **BBC2** | **ITV 1** | **C4** | **Cfive** | **Others** |
| **2000** | 27.2 | 10.8 | 29.3 | 10.5 | 5.7 | 16.6 |
| **2001** | 26.9 | 11.1 | 26.7 | 10.0 | 5.8 | 19.6 |
| **2002** | 26.2 | 11.4 | 24.1 | 10.0 | 6.3 | 22.1 |
| **2003** | 25.6 | 11.0 | 23.7 | 9.6 | 6.5 | 23.6 |
| **2004** | 24.7 | 10.0 | 22.8 | 9.7 | 6.6 | 26.2 |
| **2005** | 23.3 | 9.4 | 21.5 | 9.7 | 6.4 | 29.6 |
| **2006** | 22.8 | 8.8 | 19.6 | 9.8 | 5.7 | 33.3 |
| **2007** | 22.0 | 8.5 | 19.2 | 8.6 | 5.1 | 36.5 |

(a) What is the **BBC2** annual viewing percentage for **2005**?

.....

**(1)**

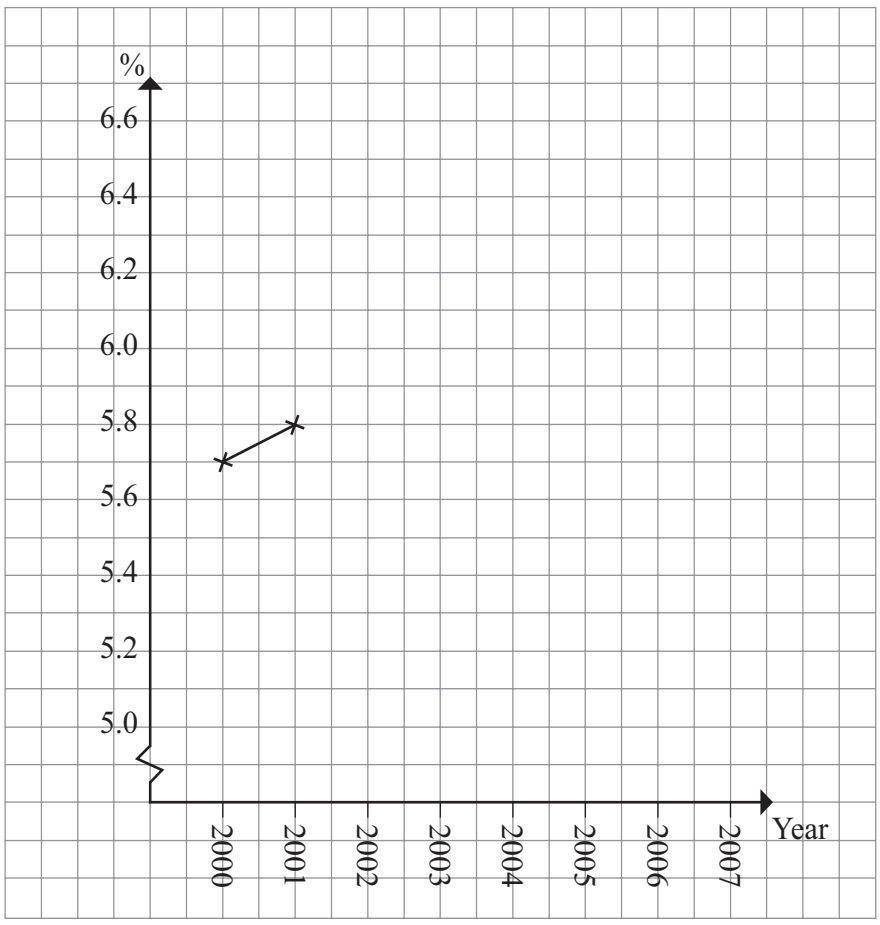
(b) What is the change in the annual viewing percentage for **BBC1** from **2006** to **2007**?

.....

**(1)**

Leave blank

(c) Complete the graph below to show the annual viewing percentage for **Cfive**.




**(2)**

(d) What can you say about the **change** in these viewing figures for **Cfive**?

.....

.....

**(2)**

(e) Calculate the mean annual viewing percentage for **BBC2** for the 8 years from **2000** to **2007**.

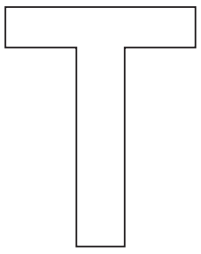
.....

**(2)** **Q1**

**(Total 8 marks)**

Leave blank

**2.** Sally is drawing a poster for a television programme.
She uses this letter.

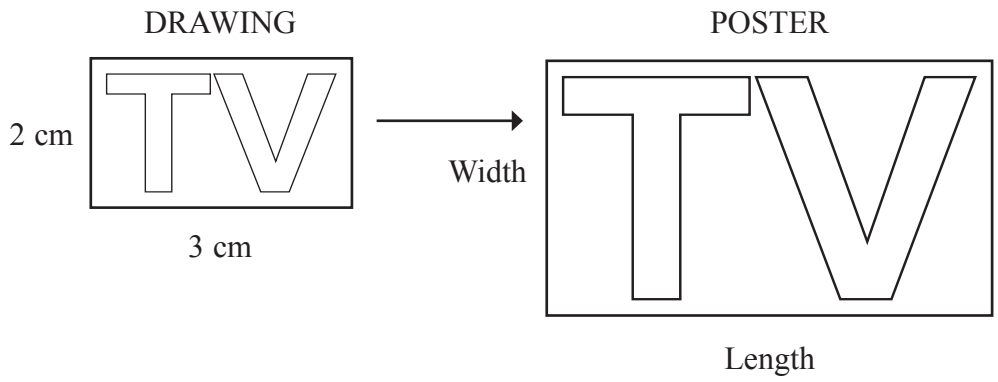


(a) Draw all **lines of symmetry** on this letter.

**(1)**

Sally first makes a drawing.
The drawing is enlarged to make the poster.

Diagram **NOT** accurately drawn




The **length** of the poster is **50** times the length of the drawing.
The **width** of the poster is **50** times the width of the drawing.

(b) Work out the **length** and **width** of the poster.

Length ..... cm

Width ..... cm
**(2)**

(c) Write down the **ratio** of the **length** of the drawing to the **length** of the poster.

.....
**(1)**

**(Total 4 marks)**

**Q2**

Leave blank

**3.** The table below gives some information about the costs of showing an advert on TV.

| | Cost of an advert | | | |
|---|---|---|---|---|
| | TV Programme | | | |
| **TV company** | **Daytime** | **Local news** | **Peak time soap** | **Drama** |
| **Carlton** | £2844 | £7962 | £29 575 | £15 925 |
| **LWT** | £2843 | £7960 | £29 567 | £15 921 |
| **Granada** | £800 | £1860 | £6907 | £3719 |
| **Yorkshire** | £506 | £1417 | £5262 | £2833 |

(a) Work out the **total** cost for **2** adverts shown during **Daytime** on **Carlton**.

£ .....

**(2)**

This is the formula used to calculate the cost, in £, of showing an advert.

Cost of showing an advert = TV programme rating × TV company rating

A TV programme rating is 26
A TV company rating is 270

(b) **Use the formula** to calculate the **cost** of showing an advert.

£ .....

**(1)**

The **ratio** of the **cost** of an advert shown on **Granada TV** to the **cost** of the advert shown on **Central TV** is **1:2**
The cost of an advert shown on Granada TV is **£800**

(c) Work out the **cost** of this advert on **Central TV**.

£ .....

**(2)** **Q3**

**(Total 5 marks)**

Leave blank

**4.** In the UK, the maximum number of **30 second** adverts that can be shown in any one hour is **24**

(a) What is the **total** number of minutes needed for **24** adverts?

..... minutes
**(2)**

(b) When **24** adverts are shown in an **hour**, how much time, in **minutes**, is there left?

..... minutes
**(1)**

**Q4**

**(Total 3 marks)**

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## TASK 2: CONFERENCE CENTRE

**Answer all five questions in this task.**

**Write your answers in the spaces provided.**

**You must write down all stages in your working.**

**5.** Tanveer is the assistant manager of a conference centre.
He books events and helps organise these events.
The types of events at the centre are Weddings, Business, and Social.
The table shows the numbers of these events booked each week in the first two months of 2009.

| Week beginning | Weddings | Business | Social |
|---|---|---|---|
| 5th January | 0 | 4 | 3 |
| 12th January | 1 | 10 | 4 |
| 19th January | 0 | 9 | 3 |
| 26th January | 1 | 13 | 4 |
| 2nd February | 2 | 15 | 6 |
| 9th February | 3 | 12 | 5 |
| 16th February | 1 | 9 | 4 |
| 23rd February | 2 | 8 | 6 |

(a) How many **weddings** are booked for the week beginning **9th February**?

.....
**(1)**

(b) During which week are exactly **10 Business** events booked?

.....
**(1)**

(c) During which week are there the **least** number of **Business** events booked?

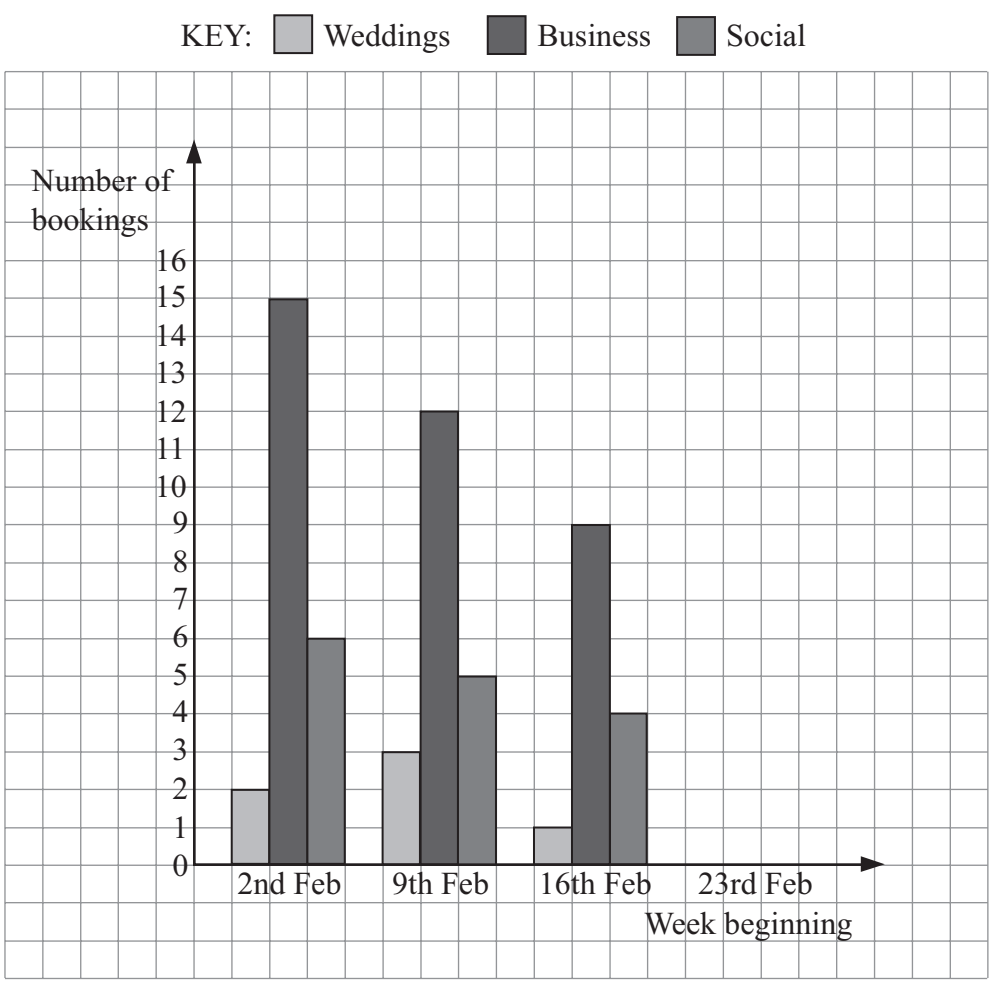
.....
**(1)**

(d) During which week are there the **most** number of bookings for **all three** events?

.....
**(1)**

Leave blank

Tanveer produced a chart for the number of bookings in February.




(e) Complete the chart for the week beginning 23rd February.

**(2)**

(f) Compare the number of bookings each week for **Business** events for the 4 weeks of February.
Write down **one** conclusion.

.....

.....

**(1)**

**(Total 7 marks)**

**Q5**





**Turn over**

Leave blank

**6.** Bookings made for the week beginning 5th January will cost a total of **£11 885**

(a) What is **£11 885** rounded to the nearest **£1000**?

£ .....

**(1)**

Bookings made for the week beginning 23rd February will cost a total of **£27 190**

(b) What is the **difference** in the **cost** for the week beginning 23rd February, and the **cost** for the week beginning 5th January?

£ .....

**(1)**

**(Total 2 marks)**

**Q6**

**7.** The cost of booking the Victoria Room each day is **£100** plus **£32** per person.
A company wants to book the Victoria Room for **2 days** and for **15 people**.

Work out the **total** cost.

£ .....

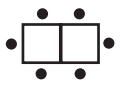
**(Total 3 marks)**

**Q7**

Leave blank

**8.** In one room of the conference centre there are 8 square tables.
Each table can sit **4** people as shown.

The tables can be put together for larger groups.
Here are **2** tables put together for **6** people.

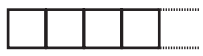


(a) How many people can be seated around **3** square tables put together in a row?

.....

**(2)**

(b) When all **8** tables are put together in a row, how many people can be seated around the tables?



.....

**(2)**

(c) When all **8** tables are placed separately, how many people can be seated?

.....

**(2)** **Q8**

**(Total 6 marks)**

Leave blank

**9.** The table below shows information about the maximum number of people that can be booked into each of the rooms in the conference centre.

| Room | Maximum number of people |
|---|---|
| Ellesmere Room | 150 |
| Bridgewater Room | 50 |
| Egerton Room | 50 |
| Manchester Room | 35 |
| Victoria Room | 20 |
| Lancaster Room | 10 |

On one day, all **six** rooms are used.
This table shows the number of people in each meeting.

| Meeting | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| Number of people | 30 | 8 | 12 | 35 | 60 | 40 |

Tanveer has to place each of these meetings in a room.

In the table below write down the letter of each meeting that you would place in each room.

| Room | Meeting |
|---|---|
| Ellesmere Room | |
| Bridgewater Room | |
| Egerton Room | |
| Manchester Room | |
| Victoria Room | |
| Lancaster Room | |

**Q9**

**(Total 2 marks)**

Leave blank

## TASK 3: ENGINEERING

**Answer all six questions in this task.**

**Write your answers in the spaces provided.**

**You must write down all stages in your working.**

**10.** The table below shows information about some major engineering and manufacturing industries and their **income** during one particular year.

| Industry | Income (£millions) | Rank |
|---|---|---|
| Electricals | 65 000 | |
| Metal production | 41 100 | |
| Chemicals | 47 500 | |
| Food products | 75 000 | |
| Printing | 46 000 | |
| Transport | 60 800 | |

The Rank column shows the **order** of the incomes of these industries.
The industry with **Rank 1** has the **largest** income.
The industry with **Rank 6** has the **smallest** income.

(a) Complete the **Rank** column in the table.

**(2)**

(b) What is the **total income** of the Electricals, Transport and Chemicals Industries?

.....

**(2)**

**Q10**

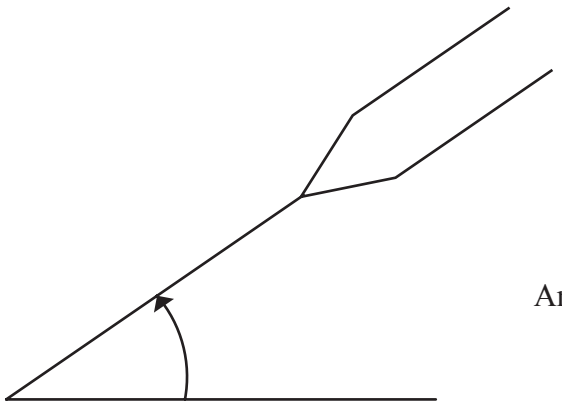
**(Total 4 marks)**

Leave blank

**11.** The table shows some information about the **angles** used in cutting different materials with a chisel.

| Material | Cutting angle | Angle of inclination |
|---|---|---|
| Aluminium | 30° | 22° |
| Medium Steel | 65° | 39.5° |
| Mild Steel | 55° | 34.5° |
| Brass | 50° | 32° |
| Copper | 45° | 29.5° |
| Cast iron | 60° | 37° |

The diagram shows the **angle of inclination** for the chisel.



Angle of inclination

(a) Measure the **angle** shown in the diagram.

.....°

**(1)**

(b) Use your answer to part (a) to write down the **material** being cut by the chisel.

.....

**(1)**

**(Total 2 marks)**

**Q11**

Leave blank

**12.** Different materials are used as seals between metals in engineering.
The table shows the maximum and minimum temperatures at which the seals will work.

| **Material** | **Maximum temperature** | **Minimum temperature** |
|---|---|---|
| Ethylene | 150 °C | – 54 °C |
| Neoprene | 135 °C | – 40 °C |
| Silicone | 260 °C | – 65 °C |
| Polyurethane | 105 °C | – 40 °C |

(a) What is the **highest** temperature at which a seal will work?

.....°C
**(1)**

(b) What is the **lowest** temperature at which a seal will work?

.....°C
**(1)**

**(Total 2 marks)**

**Q12**

Leave blank

**13.** The table shows some products from a catalogue.

| Product | | | Price per pack |
|---|---|---|---|
| Brass Wood Screws |  | **Size:** No.8 x 1.25in<br>**Pack Size:** Pack of 10 | **£2.99** |
| Pozi Screws |  | **Size:** No.6 x 0.5in<br>**Pack Size:** Pack of 50 | **£2.99** |
| Drywall Screws |  | **Size:** 3.5 x 38mm<br>**Pack Size:** Pack of 100 | **£2.99** |
| Panel Pins |  | **Size:** 50mm<br>**Pack Size:** 200g | **£2.39** |
| Clout Nails |  | **Size:** 40mm<br>**Pack Size:** 2kg | **£9.99** |

(a) What is the cost of **1** pack of **Drywall Screws**?

£ .....

**(1)**

(b) What is the cost of **100 Pozi Screws**?

£ .....

**(2)**

Leave blank

Sheena buys

**3** packs of **Panel Pins**
**2** packs of **Clout Nails**

Sheena pays with **three £10** notes.

(c) What **change** should she receive?

£ .....

**(3)**

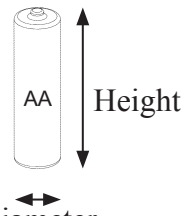
Q13

**(Total 6 marks)**

**14.** Batteries are made to standard sizes.
The table shows information about some standard batteries.

| Size | Weight (g) | Diameter (mm) | Height (mm) |
|---|---|---|---|
| AAA | 11.5 | 10.5 | 43.3 |
| AA | 22.4 | 14.3 | 48.4 |
| C | 74.5 | 26.1 | 44.3 |

Diagram **NOT** accurately drawn



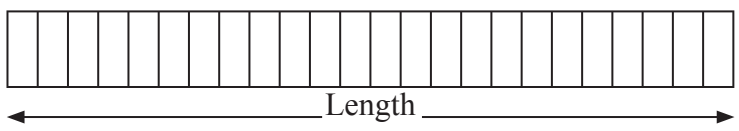

(a) What is the **range** of the **weights** of the batteries?

..... g

**(1)**

AA batteries can be bought in packs of 24
The diagram shows **24** AA batteries placed in a row.

Diagram **NOT** accurately drawn




(b) Work out the **length** of the row.

.....

**(2)**

**(Total 3 marks)**

Q14

Leave blank

**15.** In manufacturing, samples of products are accurately measured to check they have been made correctly.

A digital caliper is used to measure accurately.

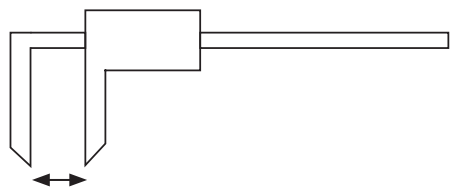


Diagram **NOT** accurately drawn

A digital caliper is accurate to within 0.01 mm.
A digital caliper is used to check a measurement of 50 mm.

(a) (i) What is 0.01 more than 50?

.....

(ii) What is 0.01 less than 50?

.....

**(2)**

(b) Write 0.01 as a fraction.

.....

**(1)**

**Q15**

**(Total 3 marks)**

**TOTAL FOR PAPER: 60 MARKS**

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