Write your name here

| Surname | | Other names |
|---|---|---|
| | | |

**Edexcel GCSE**

Centre Number

Candidate Number

# Mathematics B
## Unit 1: Statistics and Probability (Calculator)

**Foundation Tier**

Tuesday 11 June 2013 – Morning
**Time: 1 hour 15 minutes**

Paper Reference
**5MB1F/01**

Total Marks

**You must have:** Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser, calculator.
Tracing paper may be used.

## Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided
  – *there may be more space than you need*.
- **Calculators may be used.**
- If your calculator does not have a $\pi$ button, take the value of $\pi$ to be 3.142 unless the question instructs otherwise.

## Information

- The total mark for this paper is 60
- The marks for **each** question are shown in brackets
  – *use this as a guide as to how much time to spend on each question.*
- Questions labelled with an **asterisk** (**\***) are ones where the quality of your written communication will be assessed.

## Advice

- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end.

*Turn over ▶*

**PEARSON**

**Area of trapezium** $= \frac{1}{2}(a + b)h$

**Volume of prism** = area of cross section × length

*P 4 3 6 0 9 A 0 2 1 6*

1  The diagram shows 12 cards.
   There is a number on each card.

| | | |
|:---:|:---:|:---:|
| 2 | 2 | 2 |
| 2 | 2 | 2 |
| 3 | 3 | 3 |
| 4 | 4 | 8 |
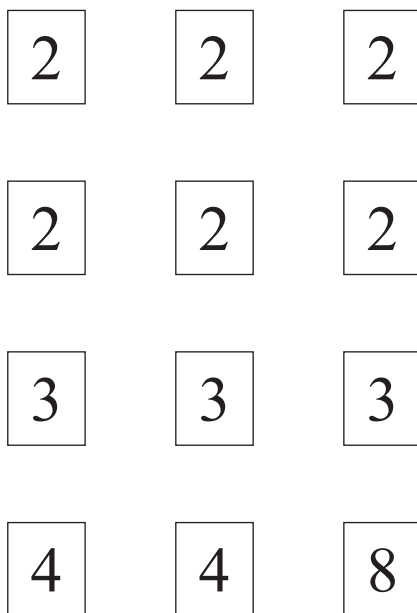
Riki takes at random one of these cards.

(a) Which number is **most** likely to be on the card?

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

(b) Which number is **least** likely to be on the card?

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

**(Total for Question 1 is 2 marks)**

**2** (a) Write 35 mm in cm.

.............................................. cm

**(1)**

(b) Write 2.4 kg in g.

.............................................. g

**(1)**

**(Total for Question 2 is 2 marks)**

**3**
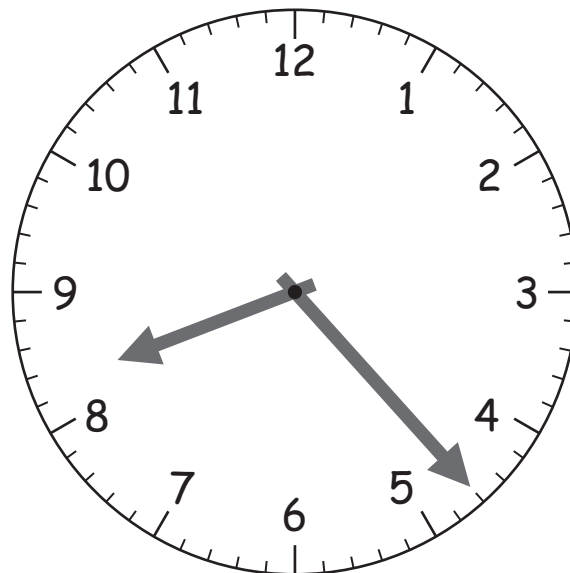
(a) Write down the time shown on the clock.

..............................................

**(1)**

Lisa got on a bus at 08 45
Lisa got off the bus at 10 20

(b) How long was Lisa on the bus?

..............................................

**(2)**

**(Total for Question 3 is 3 marks)**

**4** Here is a pictogram.
It shows the number of boxes of chocolates sold each day last week in a shop.

Monday

Tuesday

Wednesday

Thursday

Friday

Saturday

Sunday

**Key**

Represents 20 boxes
of chocolates
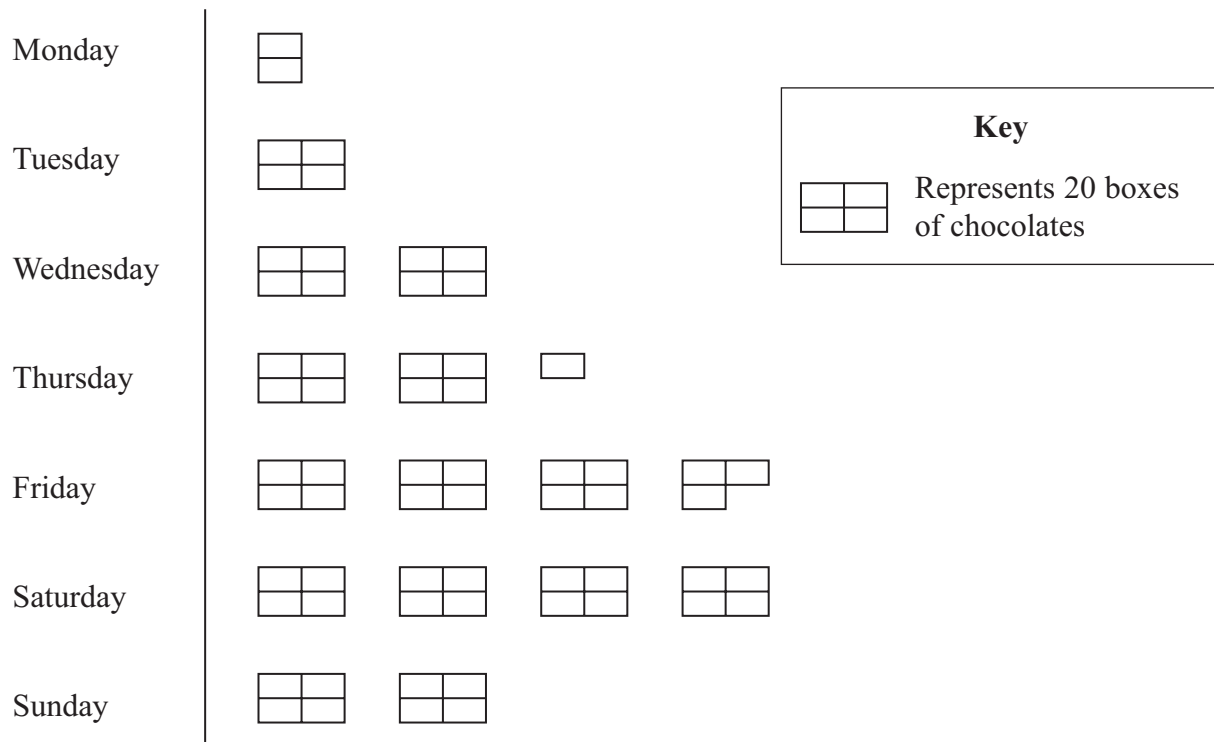
(a) Write down the number of boxes of chocolates sold

   (i) on Tuesday,

   .......................................

   (ii) on Thursday.

   .......................................

   **(2)**

(b) Work out the total number of boxes of chocolates sold last week.

   .......................................

   **(2)**

**(Total for Question 4 is 4 marks)**

**5** Here is a list of 12 numbers.

20      45      15      12      18      32      25      40      20      15      22      24

(a) Work out the range.

.............................
(2)

(b) Find the median.

.............................
(2)

(c) Work out the mean.

.............................
(2)

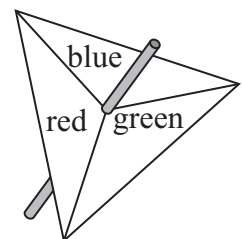**(Total for Question 5 is 6 marks)**

**6** Hamish has two spinners.

One spinner is labelled 1, 2, 3, 4, 5

The other spinner is labelled red, blue, green.

Hamish spins both spinners once.

List **all** the possible combinations Hamish could get.

....................................................................................................................................................

....................................................................................................................................................

....................................................................................................................................................

....................................................................................................................................................
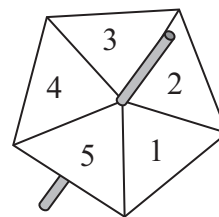
**(Total for Question 6 is 2 marks)**

**\*7** Mrs Jones recorded the number of boys and the number of girls absent from school each day last week.

The table shows this information.

| Day | Mon | Tues | Wed | Thur | Fri |
|---|---|---|---|---|---|
| **Boys** | 8 | 8 | 6 | 5 | 2 |
| **Girls** | 4 | 6 | 3 | 5 | 9 |

Mrs Jones wants to compare this information.

On the grid draw a suitable diagram or chart.

**(Total for Question 7 is 4 marks)**

*8 Here is part of Sheila's electric bill.

Electric Bill

New reading  3546 units
Old reading   3298 units

Price per unit      12p

Work out how much Sheila has to pay for the units of electricity she used.

(Total for Question 8 is 4 marks)

**9** The table gives some information about fridges and freezers.

|  | **Make** | **Energy rating** | **Frost-free** | **Capacity** | **Cost** |
|---|---|---|---|---|---|
| **Fridge** | Beco | C | No | 4 cu ft | £95 |
| **Freezer** | Filips | A | Yes | 4 cu ft | £115 |
| **Fridge** | Dandy | B | Yes | 6 cu ft | £122 |
| **Freezer** | Beco | B | Yes | 6 cu ft | £125 |
| **Fridge** | Dandy | C | No | 8 cu ft | £165 |
| **Freezer** | Filips | B | No | 8 cu ft | £145 |

Rashmi wants to buy one of these fridges and one of these freezers.

He wants a fridge with a capacity of more than 5 cu ft.
The fridge must be frost-free.

Rashmi wants a freezer with an energy rating of A or B.
The freezer must have a capacity of 8 cu ft.

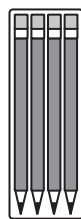Work out the total cost of the fridge and the freezer.

£ .............................................

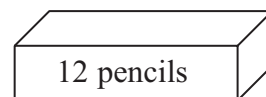**(Total for Question 9 is 2 marks)**

**10** A shop sells pencils in packs and in boxes.

There are

4 pencils in a pack
and 12 pencils in a box.

12 pencils

box

pack

Lola buys *d* packs of pencils.

(a) Write down an expression, in terms of *d*, for the number of pencils Lola buys.

.........................................................

**(1)**

Rory buys *x* packs of pencils and *y* boxes of pencils.

(b) Write down an expression, in terms of *x* and *y*, for the total number of pencils Rory buys.

.........................................................

**(2)**

**(Total for Question 10 is 3 marks)**

**11** Rina wants to find the heights of the students in her year group.

Design a suitable table for a data collection sheet that she could use to collect this information.

**(Total for Question 11 is 3 marks)**

**12** The pie chart shows some information about the types of food that 60 people like best.
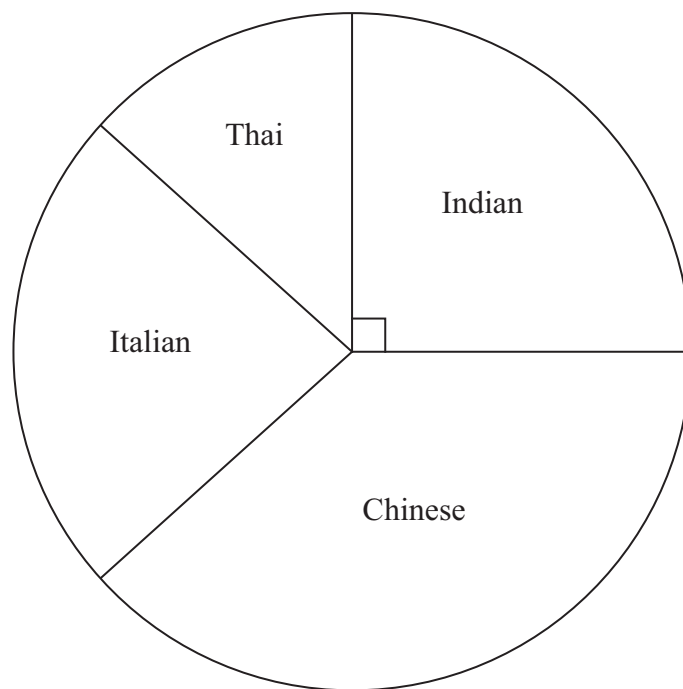


(a) (i)  Measure the angle for Thai.

.............................................°

(ii)  What fraction of the people like Thai food best?

.............................................

**(2)**

(b)  Work out the number of people who like Chinese food best.

.............................................

**(3)**

**(Total for Question 12 is 5 marks)**

**13** There are 100 beads in a bag.

50 of the beads are red
25 of the beads are blue
15 of the beads are green
The rest of the beads are yellow

Sally takes at random a bead from the bag.

What is the probability that the bead is

(a) green,

.............................................

(2)

(b) black,

.............................................

(1)

(c) yellow?

.............................................

(2)

(Total for Question 13 is 5 marks)

*P43609A01216*

**14** The stem and leaf diagram gives the heights, in cm, of some potato plants.

| 2 | 3 | 5 | 5 | 9 | | |
|---|---|---|---|---|---|---|
| 3 | 0 | 4 | 7 | 7 | 7 | 7 |
| 4 | 1 | 3 | 4 | 4 | | |
| 5 | 2 | 6 | 7 | 9 | | |
| 6 | 3 | 6 | 8 | | | |
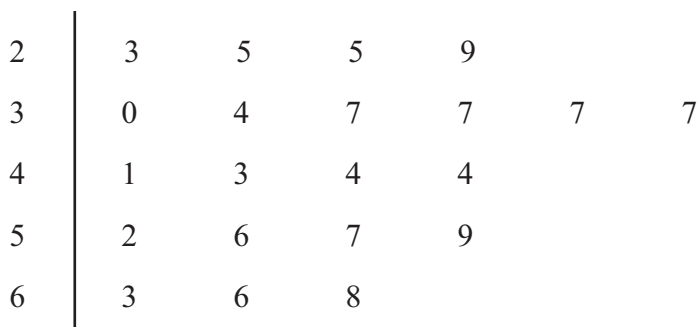
**Key**

2 | 3 represents 23 cm

(a) Write down the greatest height.

.............................................. cm

**(1)**

(b) Write down the mode.

.............................................. cm

**(1)**

(c) Find the median.

.............................................. cm

**(2)**

**(Total for Question 14 is 4 marks)**

**15** Visage is an internet site.
Jaz is going to carry out a survey on the lengths of time people spend using Visage.

He uses this question on a questionnaire.

> How much time do you spend using Visage?
>
> ☐    ☐    ☐    ☐
>
> none    a little    not much    a lot

(a) Write down **two** things that are wrong with this question.

1. ................................................................................................................................................................

.........................................................................................................................................................................

2. ................................................................................................................................................................

.........................................................................................................................................................................

**(2)**

(b) Design a better question that Jaz could use.

**(2)**

Jaz is going to give his questionnaire to his friends.

(c) This may not produce a good sample.
Give one reason why.

.........................................................................................................................................................................

.........................................................................................................................................................................

**(1)**

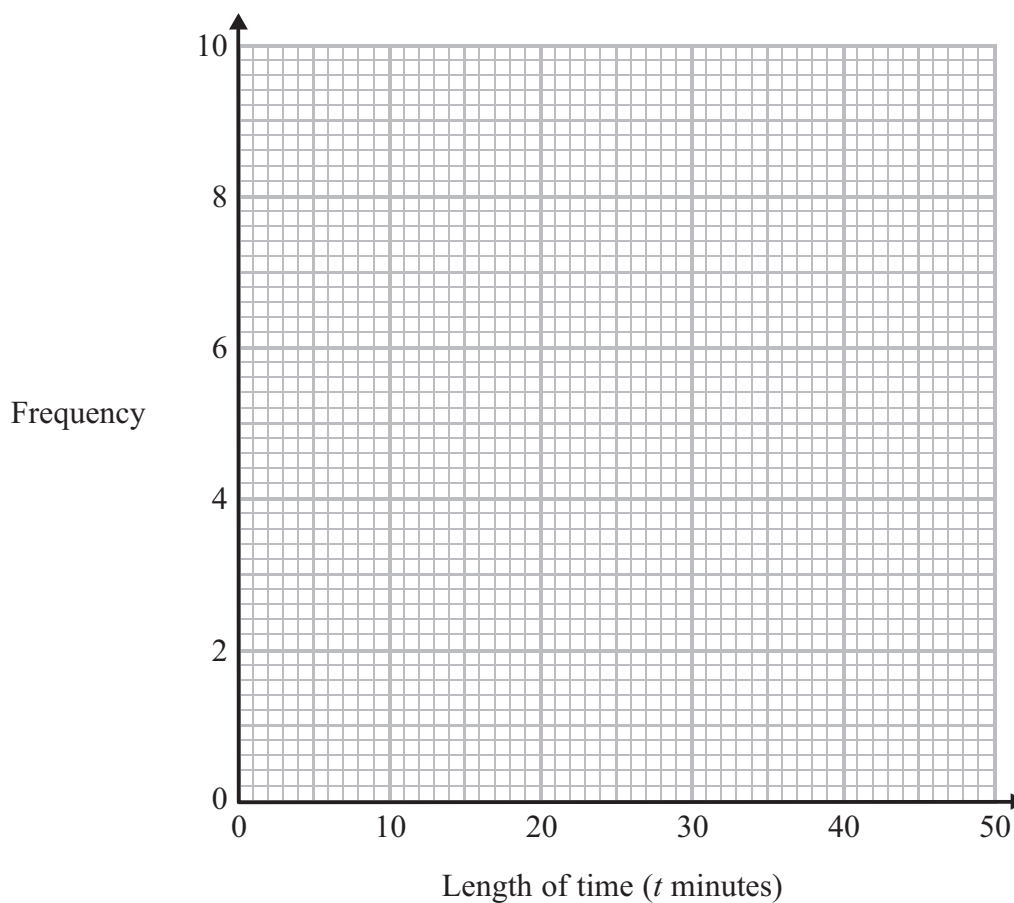**(Total for Question 15 is 5 marks)**

**16** Helen went on 35 flights in a hot air balloon last year.

The table gives some information about the length of time, $t$ minutes, of each flight.

| Length of time ($t$ minutes) | Frequency |
|:---:|:---:|
| $0 < t \leqslant 10$ | 6 |
| $10 < t \leqslant 20$ | 9 |
| $20 < t \leqslant 30$ | 8 |
| $30 < t \leqslant 40$ | 7 |
| $40 < t \leqslant 50$ | 5 |

On the grid below, draw a frequency polygon for this information.



Length of time ($t$ minutes)

Frequency

**(Total for Question 16 is 2 marks)**

**Turn over for Question 17**

**17** On an activity day students play one sport.

They play football or hockey or tennis.

120 students are on the activity day.

30 of the students are boys.

12 of the boys and 26 of the girls play hockey.

45 of the students play football.
35 of the 45 students who play football are girls.

Work out the number of girls who play tennis.

.......................................................

**(Total for Question 17 is 4 marks)**

**TOTAL FOR PAPER IS 60 MARKS**