Write your name here

Surname

Other names

**Pearson
Edexcel GCSE**

Centre Number

Candidate Number

Mathematics B
Unit 1: Statistics and Probability (Calculator)

Foundation Tier

Wednesday 5 November 2014 – 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 π button, take the value of π 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.
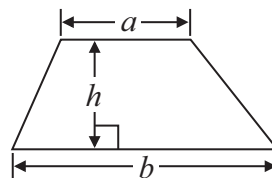
Turn over ▶

P 4 4 5 8 8 A 0 1 2 0

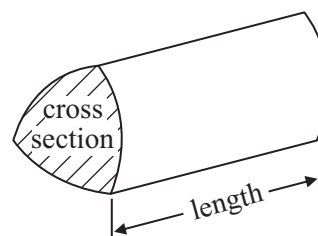**PEARSON**

GCSE Mathematics 2MB01

Formulae: Foundation Tier

You must not write on this formulae page.
Anything you write on this formulae page will gain NO credit.

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

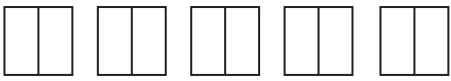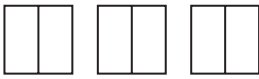**Volume of prism** = area of cross section × length
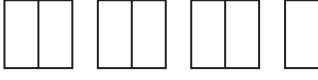
Answer ALL questions.

Write your answers in the spaces provided.

You must write down all stages in your working.

1 The pictogram shows information about the number of books sold in a shop on Monday, on Tuesday and on Wednesday one week.

Monday	▯▯ ▯▯ ▯▯ ▯▯ ▯▯
Tuesday	▯▯ ▯▯ ▯▯
Wednesday	▯▯ ▯▯ ▯▯ ▯
Thursday	
Friday	

Key:

▯▯

represents 4 books

(a) Write down the number of books sold on Monday.

....
(1)

(b) Write down the number of books sold on Wednesday.

....
(1)

8 books were sold on Thursday.
18 books were sold on Friday.

(c) Use this information to complete the pictogram.

(2)

(Total for Question 1 is 4 marks)

2 Here are the ages of 10 children at a party.

6   5   8   6   7   7   8   8   8   6

(a) Write down the mode.

....

(1)

(b) Work out the mean age of the children.

....

(2)

(c) Work out the range of the ages of the children at the party.

....

(2)

Another child comes to the party.
This child is 7 years old.

(d) Does this change the range of the ages of the children at the party? ....
Explain your answer.

....

....

(1)

(Total for Question 2 is 6 marks)

3 The table shows information about 5 holiday parks.

Holiday park	Location	Indoor pool	Type of accommodation	Cost of holiday
Sea View	Cornwall	No	Caravans	£595
Rosewood	Cornwall	Yes	Caravans	£685
Castle Park	Dorset	Yes	Lodges	£545
Reed Farm	Norfolk	Yes	Lodges	£650
The Pines	Suffolk	No	Caravans	£495

A holiday costs £650 at one of the holiday parks.

(a) Which holiday park?

....

(1)

(b) Which of the holiday parks has an indoor pool and caravans?

....

(1)

Sally wants to stay in a lodge at a holiday park with an indoor pool.

(c) Write down the least cost for this holiday.

£...

(1)

(Total for Question 3 is 3 marks)

4 The price list shows the normal price of some items in a catalogue.

Normal Price	
Bubble bath	£3.00
Shower gel	£2.95
Soap	£2.50
Hand cream	£3.50

There is a special offer.
Joanna can buy any 3 **different** items from the list for a total price of £5

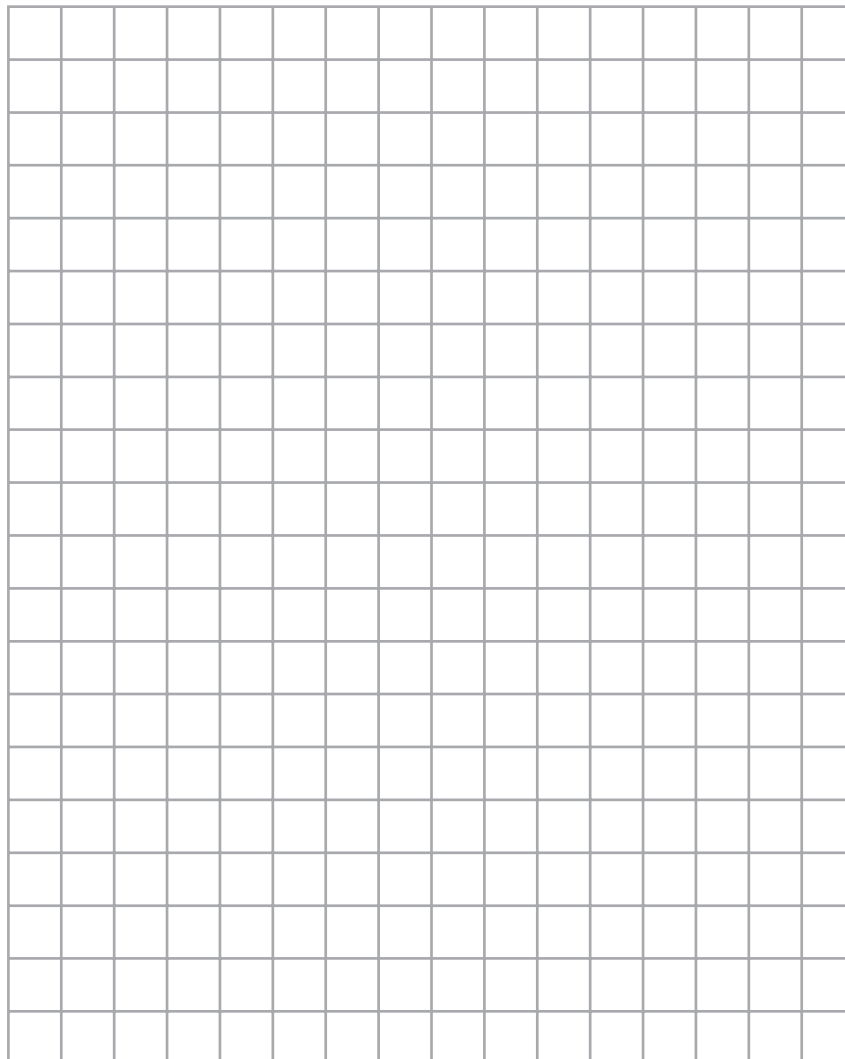Work out the most money she can save.

£...

(Total for Question 4 is 3 marks)

*5   The table shows the minimum temperature and the maximum temperature in a town on each of five days.

	Friday	Saturday	Sunday	Monday	Tuesday
Daily maximum temperature (°C)	18	17	14	14	9
Daily minimum temperature (°C)	12	11	11	8	5

Draw a suitable diagram or chart for this information.

(Total for Question 5 is 4 marks)

6 Here is part of a train timetable from Cromer to Norwich and from Norwich to Cromer.

Cromer to Norwich						
Cromer	10 57	11 57	12 57	13 57	14 57	15 57
North Walsham	11 14	12 14	13 14	14 14	15 14	16 16
Hoveton	11 24	12 25	13 24	14 18	15 24	16 27
Norwich	11 41	12 41	13 41	14 41	15 41	16 44

Norwich to Cromer						
Norwich	14 45	15 45	16 45	17 45	18 51	19 55
Hoveton	14 59	16 00	17 00	18 00	19 05	20 10
North Walsham	15 13	16 15	17 15	18 17	19 20	20 25
Cromer	15 30	16 33	17 33	18 36	19 39	20 43

A train leaves Cromer at 13 57

(a) At what time should this train get to Hoveton?

....

(1)

Mike lives in Cromer.
He wants to go to watch a football match in Norwich.
Mike is going to go to Norwich by train.

The football match starts at 3 pm.
He wants to get to the football ground at least 30 minutes before the match starts.
It will take Mike 20 minutes to walk from the station to the football ground.

The match will end at 4.55 pm.
It will then take Mike 30 minutes to get to the station.
He wants to get back to Cromer as early as possible.

(b) Plan Mike's journey to the football match and back to Cromer.
    You must include the times of the trains.

(4)

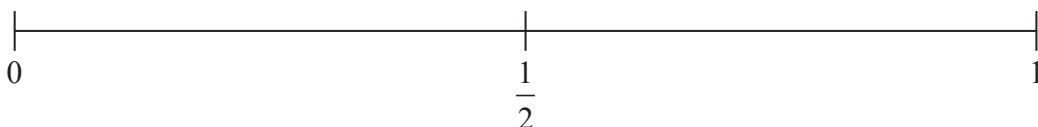**(Total for Question 6 is 5 marks)**

7 Tom uses 10 letter cards to spell out the word 'statistics'.

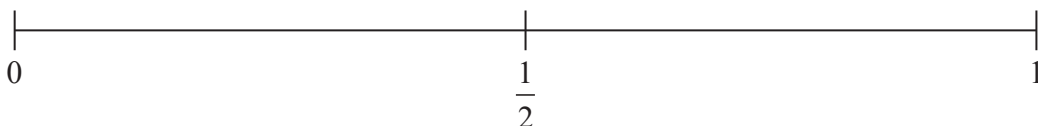| S | T | A | T | I | S | T | I | C | S |

Tom is going to take at random one of these cards.

(a) On the probability scale below, mark with a cross (×) the probability that the card has the letter **S** on it.

```
├───────────────────────┼───────────────────────────────┤
0                       1                               1
                        ─
                        2
```

(1)

(b) On the probability scale below, mark with a cross (×) the probability that the card has the letter **P** on it.

```
├───────────────────────┼───────────────────────────────┤
0                       1                               1
                        ─
                        2
```

(1)

One letter has the probability of $\frac{1}{5}$ of being taken.

(c) Write down this letter.

....

(1)

(Total for Question 7 is 3 marks)

8 Jo and Liz work in the same shop.

One day, Liz starts work at 9.30 am and stops working 5 hours later.
Jo works from 11.30 am until 4.30 pm.

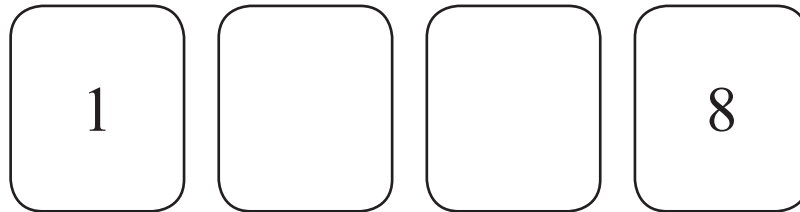Work out the number of hours that Jo and Liz are working at the same time.

.... hours
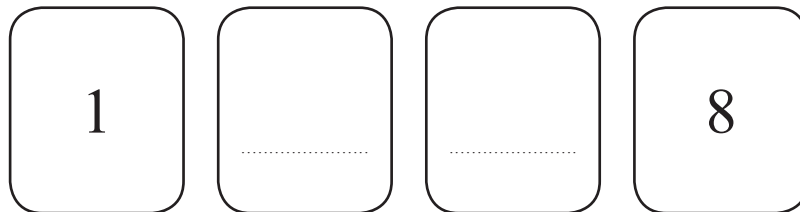
(Total for Question 8 is 2 marks)

9 Dara has four number cards.
Each card has a positive whole number on it.
Dara puts the cards on a table so that the numbers are in order, starting with the smallest number.

Two of the cards are turned over and you cannot see the numbers on them.

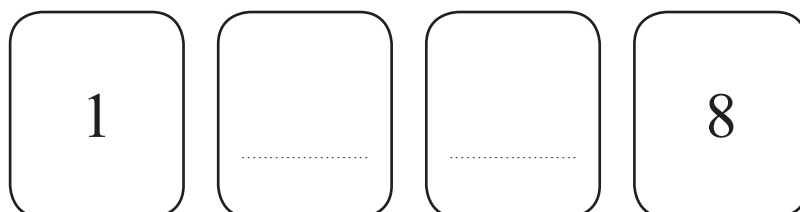| 1 | | | 8 |

The median of the four numbers is 5

(i) Complete the cards below to show two numbers that could be on the cards that are turned over.

| 1 | .... | .... | 8 |

(ii) Complete the cards below to show two other numbers that could be on the cards that are turned over.

| 1 | .... | .... | 8 |

(Total for Question 9 is 2 marks)

*10 You can use this conversion graph to change between Pounds (£) and Euros (€).
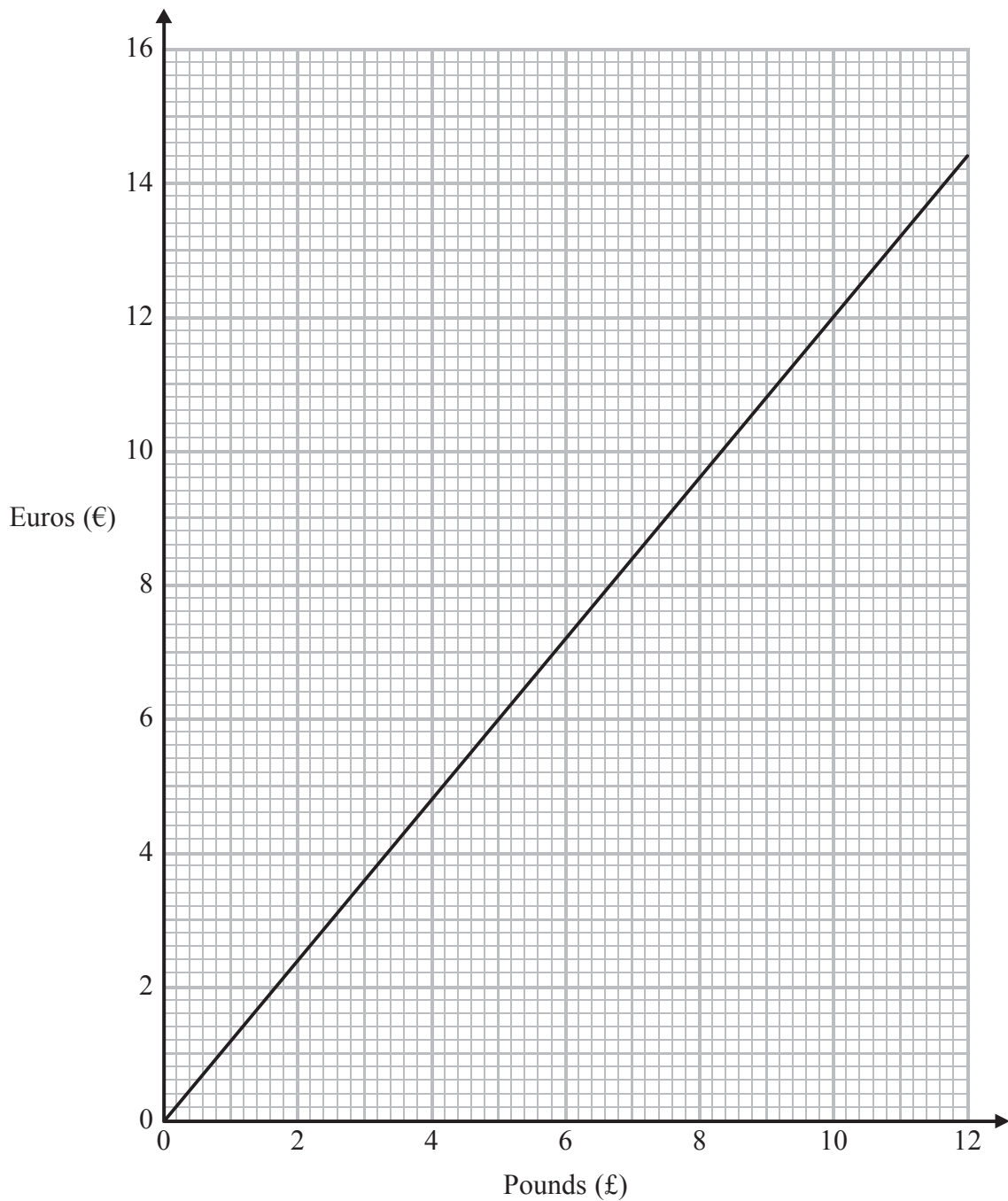
A ticket for a concert in London costs £60
A ticket for a concert in Dublin costs €70

Compare the cost of the ticket for the concert in London with the cost of the ticket for the concert in Dublin.

(Total for Question 10 is 4 marks)

P44588A01220

11 Callum wins £300 in a raffle.

He gives 5% of the £300 to charity.

He saves $\frac{2}{5}$ of the £300

He uses the rest of the money to buy clothes.

Work out how much of the money Callum uses to buy clothes.

£...

(Total for Question 11 is 3 marks)

Turn over ▶

12 The two-way table shows some information about how some men and some women travelled to work yesterday.

	Train	Car	Bus	Total
Men	12		6	28
Women		4		
Total			13	50

(a) Work out the total number of women.

....
(1)

(b) Work out the number of people who travelled to work by train yesterday.

....
(3)

A man is chosen at random from all these men.

(c) Write down the probability that he travelled to work by train.
Give your answer as a fraction in its simplest form.

....
(2)

(Total for Question 12 is 6 marks)

13 Olu is going to take at random a counter from a bag.
The probability that he will take a red counter is 0.6

Olu writes down the colour of the counter.
He then puts the counter back in the bag.
Olu does this 50 times.

Work out an estimate for the number of times that Olu takes a red counter from the bag.

....

(Total for Question 13 is 2 marks)

14 Dan, Harry and Regan sell cars.

Dan sells x cars.
Harry sells 5 more cars than Dan.
Regan sells twice as many cars as Dan.

Write an expression, in terms of x, for the mean number of cars Dan, Harry and
Regan sell.

....

(Total for Question 14 is 2 marks)

15 Tendai is doing a survey to find out how often people travel by bus.
She is going to ask 10 women leaving a railway station.

(a) This may **not** produce a good sample for Tendai's survey.
Give 2 reasons why.

Reason 1 ....

....

....

Reason 2 ....

....

....

(2)

(b) Design a suitable question for Tendai to use on a questionnaire to find out the number
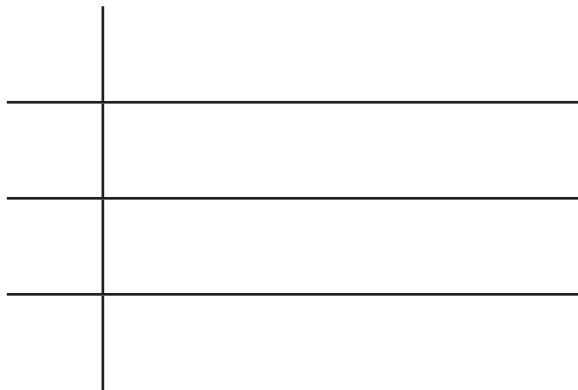of times people travel by bus.

(2)

(Total for Question 15 is 4 marks)

16 Here are the heights, in centimetres, of 15 children.

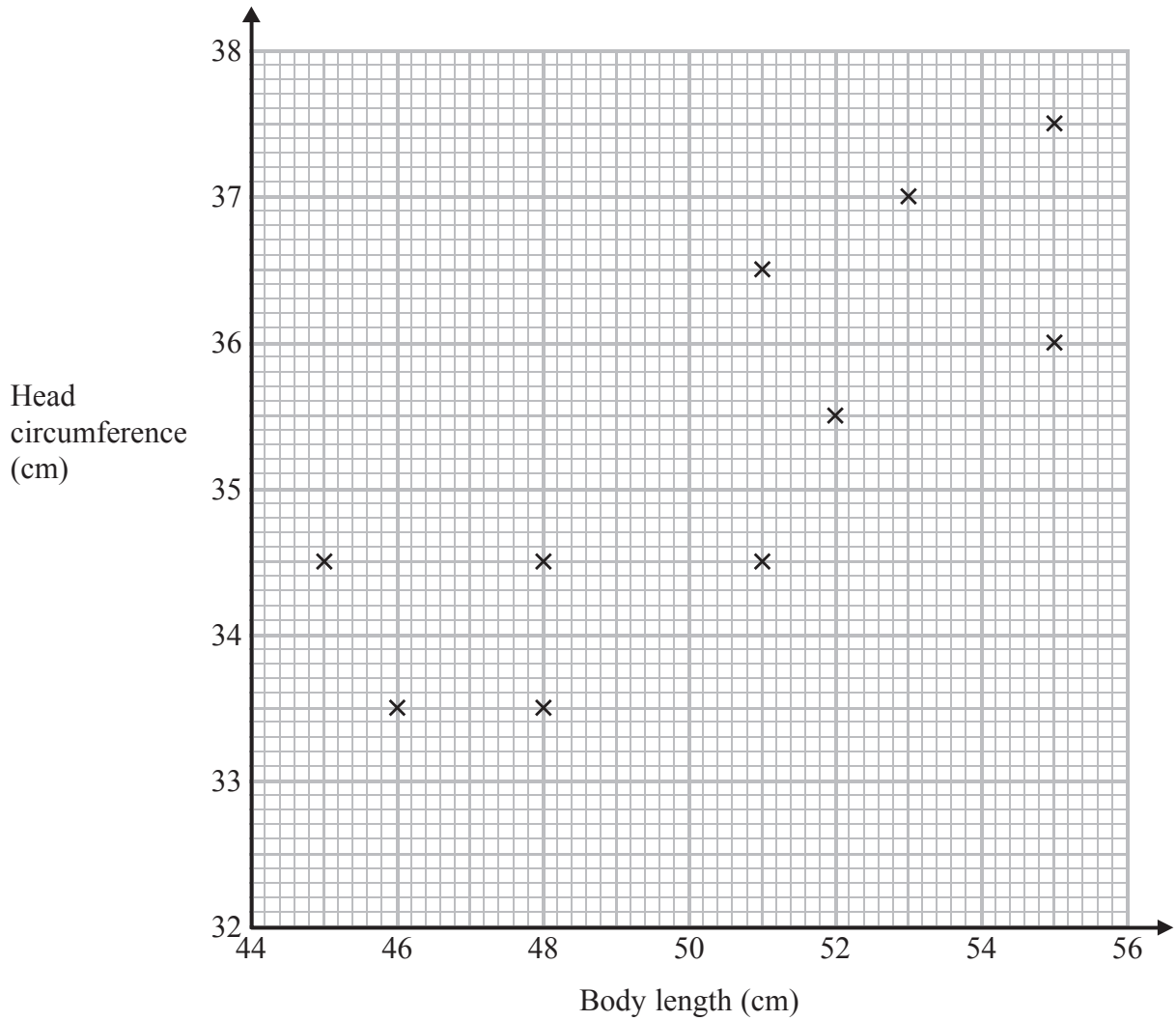|				
123	147	135	150	147
129	148	149	125	137
133	138	133	130	151

Show this information in an ordered stem and leaf diagram.

(Total for Question 16 is 3 marks)

17 The scatter graph shows information about 10 newborn babies.
It shows each baby's body length and head circumference.

Another baby has a body length of 47 cm and head circumference 34 cm.

(a) Show this information on the scatter graph.

(1)

(b) What type of correlation does the scatter graph show?

....

(1)

A baby has head circumference 35 cm.

(c) Estimate the body length of this baby.

.... cm

(2)

(Total for Question 17 is 4 marks)

TOTAL FOR PAPER IS 60 MARKS

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