

Write your name here

Surname

Other names

Pearson
Edexcel Award

Centre Number

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Candidate Number

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Statistical Methods

Level 1

Calculator allowed

Wednesday 14 May 2014 – Morning

Time: 1 hour 30 minutes

Paper Reference

AST10/01

You must have:

Pen, HB pencil, eraser, calculator, ruler, protractor.

Total Marks



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 80
- The marks for **each** question are shown in brackets
– *use this as a guide as to how much time to spend on each question.*

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 ►

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PEARSON

Answer ALL questions.

Write your answers in the spaces provided.

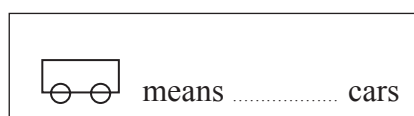
You must write down all stages in your working.

- 1 The pictogram gives information about the numbers of cars sold in the first four months of this year from a showroom.

Month	Number of cars sold
January	
February	
March	
April	
May	

In January, 24 cars were sold.

- (a) Complete the key.



(1)

- (b) Write down the number of cars sold in

- (i) February,

..... cars

- (ii) April.

..... cars

(2)

In May, 28 cars were sold.

- (c) Represent this information in the pictogram.

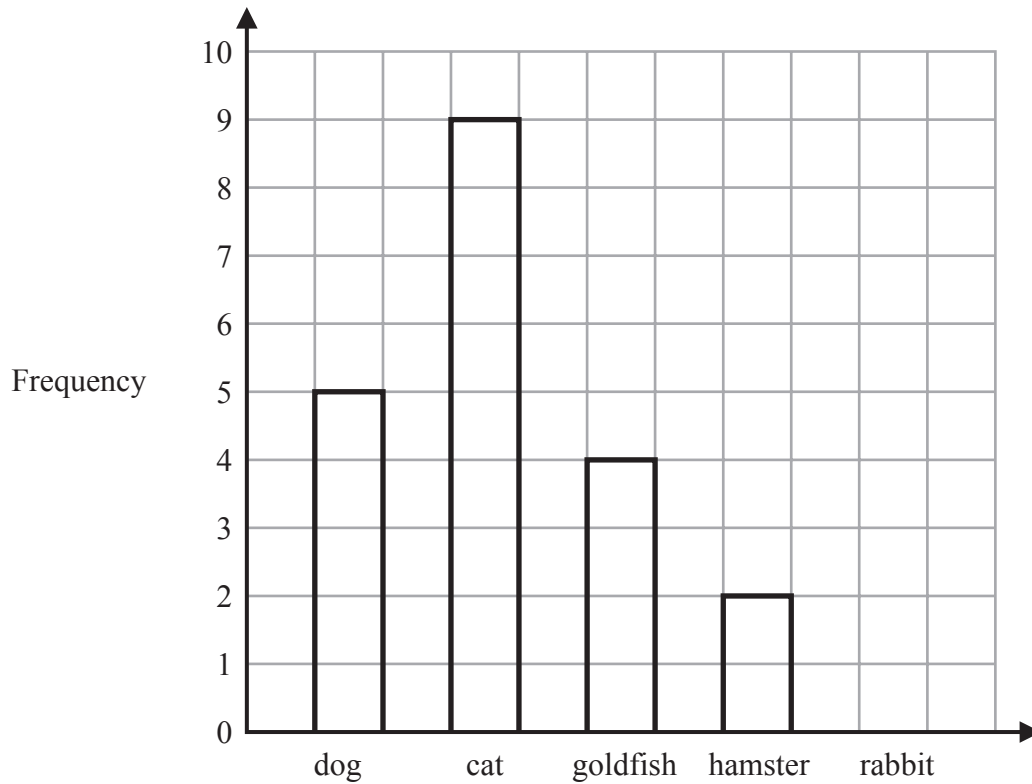
(1)

(Total for Question 1 is 4 marks)



2 Gemma asked some friends to tell her each of their favourite pet.

This incomplete bar chart shows some information about their answers.



(a) Write down the number of friends who answered goldfish.

.....
(1)

(b) Which pet did most friends say is their favourite pet?

.....
(1)

7 friends said their favourite pet is rabbit.

(c) Complete the bar chart to show this information.

(1)

(d) How many friends did Gemma ask?

.....
(1)

(Total for Question 2 is 4 marks)



3 The table shows some information about fruits.

The information is based on 100 grams of each fruit.

Fruit	Calcium (mg)	Fibre (g)	Calories
Apricots	14	2.4	48
Bananas	6	2.4	92
Cranberries	7	4.2	48
Grapes	11	1.0	71
Kiwi fruits	26	3.4	61
Mangos	10	1.8	65

(a) Write down the amount of fibre in mangos.

..... g
(1)

One of the fruits has 11 mg of calcium.

(b) Write down the name of the fruit.

.....
(1)

(c) Which fruit has the least amount of calcium?

.....
(1)

Two of the fruits have the same calories.

(d) Which two fruits?

..... and
(1)

(Total for Question 3 is 4 marks)



4 A box contains 4 balls.

2 balls are black.

1 ball is green.

1 ball is red.

One of these balls is to be taken at random from the box.

(a) Underline the word which best describes the likelihood that the ball is yellow.

Impossible

Unlikely

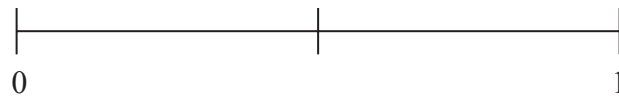
Evens

Likely

Certain

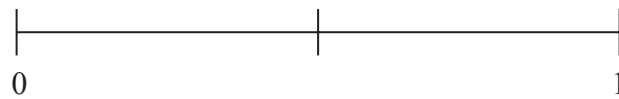
(1)

(b) On the probability scale, mark with a cross (×) the probability that the ball is black.



(1)

(c) On the probability scale, mark with a cross (×) the probability that the ball is green.



(1)

(Total for Question 4 is 3 marks)



5 Anjali asked each of her friends to name which city in the world they would most like to visit.

Here are her results.

New York	Paris	Rome	New York	Paris
Berlin	New York	Athens	Paris	Rome
Rome	New York	Paris	Rome	New York
New York	Athens	New York	Athens	Rome

(a) How many friends did Anjali ask?

.....
(1)

(b) Which city was named only once?

.....
(1)

(c) Which city was named the most?

.....
(1)

(Total for Question 5 is 3 marks)

6 Sandeep wants to find out which types of books his friends read.

Design a data collection sheet that Sandeep can use.

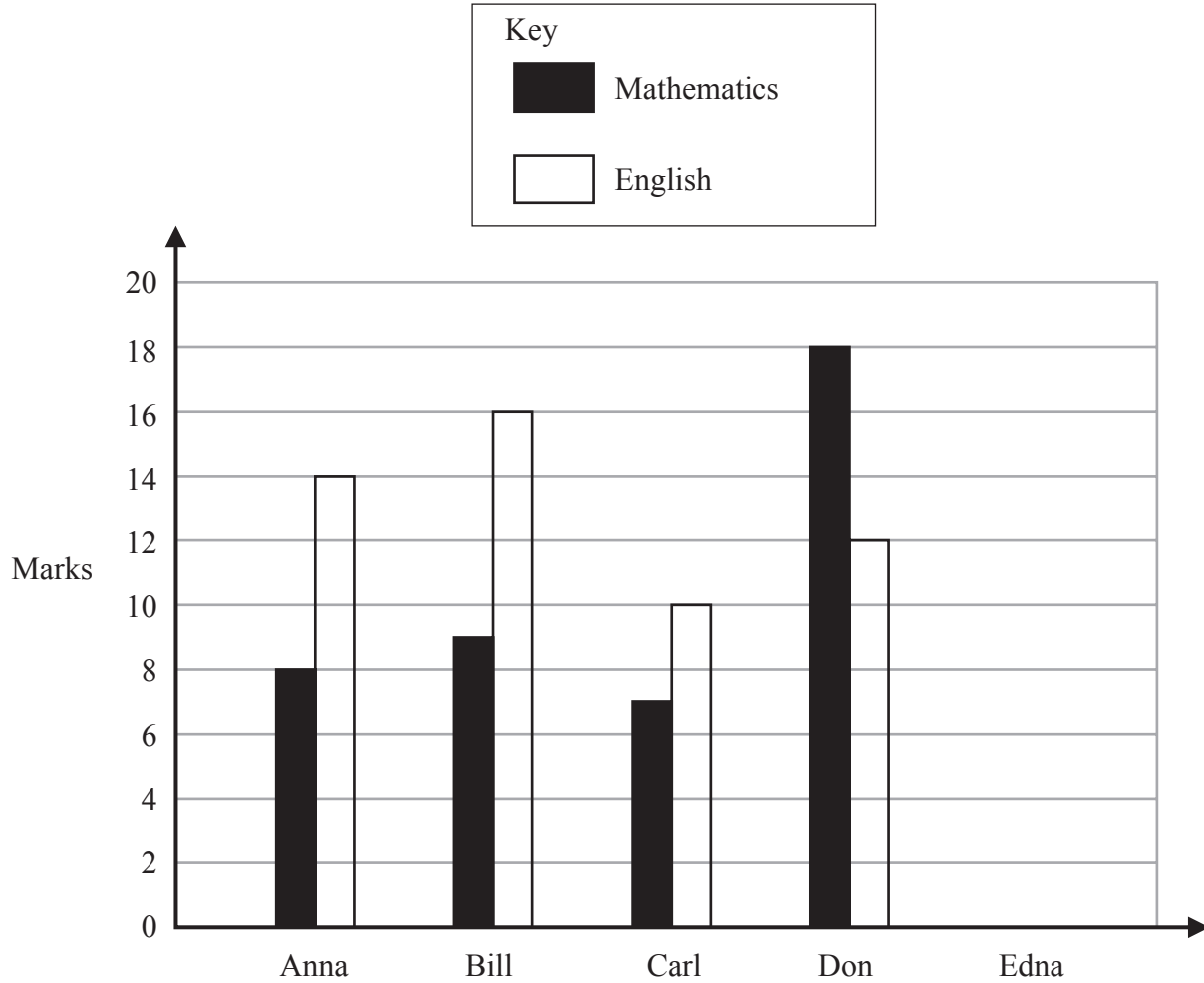
(Total for Question 6 is 2 marks)



7 Some students each sat a Mathematics test and an English test.

Each test was out of 20 marks.

The dual bar chart shows the results of four of these students.



(a) How many marks did Bill get in his English test?

.....
(1)

(b) Who got more marks in their Mathematics test than in their English test?

.....
(1)

(c) How many more marks did Anna get in her English test than in her Mathematics test?

.....
(1)

Edna got 7 marks in her Mathematics test and 12 marks in her English test.

(d) Show this information on the dual bar chart.

(2)

(Total for Question 7 is 5 marks)



8 Adam writes down one letter from the word BAT.

Then he writes down one number from 2, 4 and 6

B A T

2 4 6

List **all** the possible outcomes Adam could write down.
One has been done for you.

(B, 2).....
.....
.....
.....

(Total for Question 8 is 2 marks)



9 In an experiment a drawing pin is dropped.
The number of times it lands point up is recorded.



In experiment 1, the drawing pin is dropped 10 times and lands point up 7 times.

(a) Using the results of experiment 1, estimate the probability that the next time the drawing pin is dropped it will land point up.

.....
(1)

In experiment 2, the drawing pin is dropped 100 times and lands point up 59 times.

(b) Using the results of experiment 2, estimate the probability that the next time the drawing pin is dropped it will land point up.

.....
(1)

(c) Which of the two experiments gives the most reliable estimate of the probability?
Give a reason for your answer.

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

(Total for Question 9 is 4 marks)



10 James recorded the number of people living in each house on his estate in 2013.

Here are his results.

3 2 4 5 2 2 8 3 7

(a) Work out the median.

.....
(2)

(b) Work out the mean.

.....
(2)

(c) Work out the range.

.....
(2)

For the same estate in 1913, the mean was 5.2 and the range was 7

(d) Compare the means and the ranges for 1913 and 2013.

Mean

Range

(2)

(Total for Question 10 is 8 marks)



11 Sara buys cartons of different flavoured yoghurts.

She buys 5 peach yoghurts, 6 strawberry yoghurts, 8 banana yoghurts and 11 apple yoghurts.

Sara takes at random one of these 30 yoghurts.

(a) Find the probability that the flavour of the yoghurt she takes is

(i) peach,

.....

(ii) banana or apple.

.....

(4)

When Sara goes shopping for yoghurt she walks or she cycles.

The probability that she will walk is 0.37

(b) What is the probability that Sara will cycle?

.....
(2)

(Total for Question 11 is 6 marks)



12 Richard recorded the number of letters he received each day for the last 30 days.

Here are his results.

2 4 2 3 3 4 5 1 5 2
2 3 2 4 3 5 1 5 2 5
4 3 5 1 1 1 2 4 2 1

(a) Complete the frequency table for his results.

Number of letters	Tally	Frequency
1		
2		
3		
4		
5		

(3)

(b) Write down the mode of the numbers of letters.

.....
(1)

(c) Work out the total number of letters.

.....
(2)

(Total for Question 12 is 6 marks)



13 Tania collected some information about the heights, in centimetres, of some plants.

This information is shown in the stem and leaf diagram.

0	7	7	8				
1	2	3	4	5	5	8	
2	1	2	7	7	7	7	8
3	0	3	4	4	7	7	
4	2	3	4				

Key:
0 | 7 means 7 centimetres

(a) Write down the modal height.

..... cm
(1)

(b) Work out the range.

..... cm
(2)

One of these plants is chosen at random.

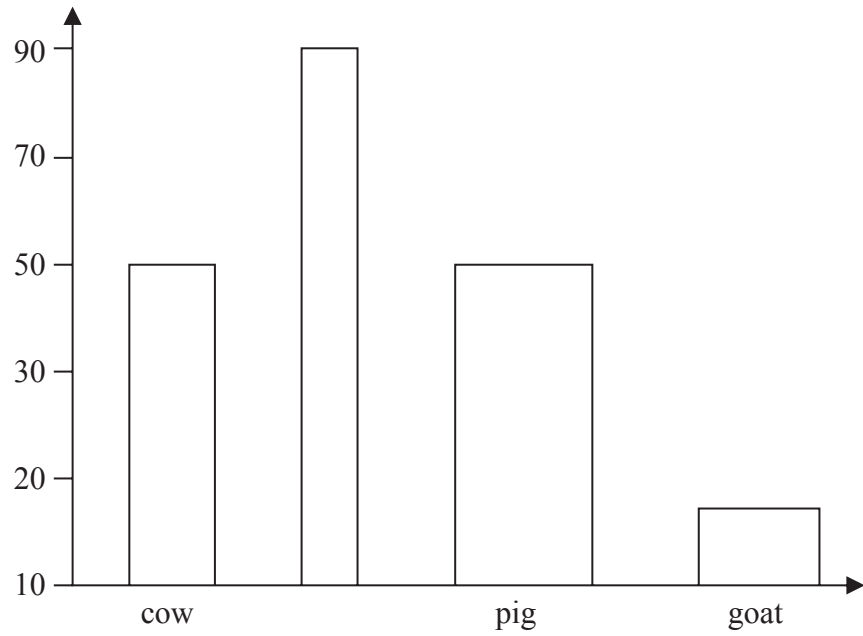
(c) Find the probability that the height of this plant is less than 10 centimetres.

.....
(2)

(Total for Question 13 is 5 marks)



14 The bar chart gives information about the animals on a farm.



Write down three things that could be misleading or are wrong with the bar chart.

- 1
- 2
- 3

(Total for Question 14 is 3 marks)



15 The two-way table gives information about the colours of Kawasaki motorbikes and Yamaha motorbikes in a garage.

	Red	Blue	Black	Total
Kawasaki	15			49
Yamaha		17		
Total	23	42		90

(a) Write down the number of blue Yamaha motorbikes.

.....
(1)

(b) Complete the two-way table.

(3)

(Total for Question 15 is 4 marks)



16 Jaya wants to find out how often people use their mobile phones.

She uses this question on a questionnaire.

How often do you use your mobile phone?

1 – 3

3 – 6

7 – 10

10 – 15

Write down two things that are wrong with this question.

1

.....

2

.....

(Total for Question 16 is 2 marks)



17 In a game, a dart is thrown at a target.

A prize is always won when a dart hits the target.

The table shows the probability of winning each of three of the four prizes when a dart hits the target.

Prize	Teddy bear	Goldfish	Necklace	Another go
Probability	0.10	0.25	0.45	

John throws a dart at the target.

He hits the target.

Work out the probability that John wins

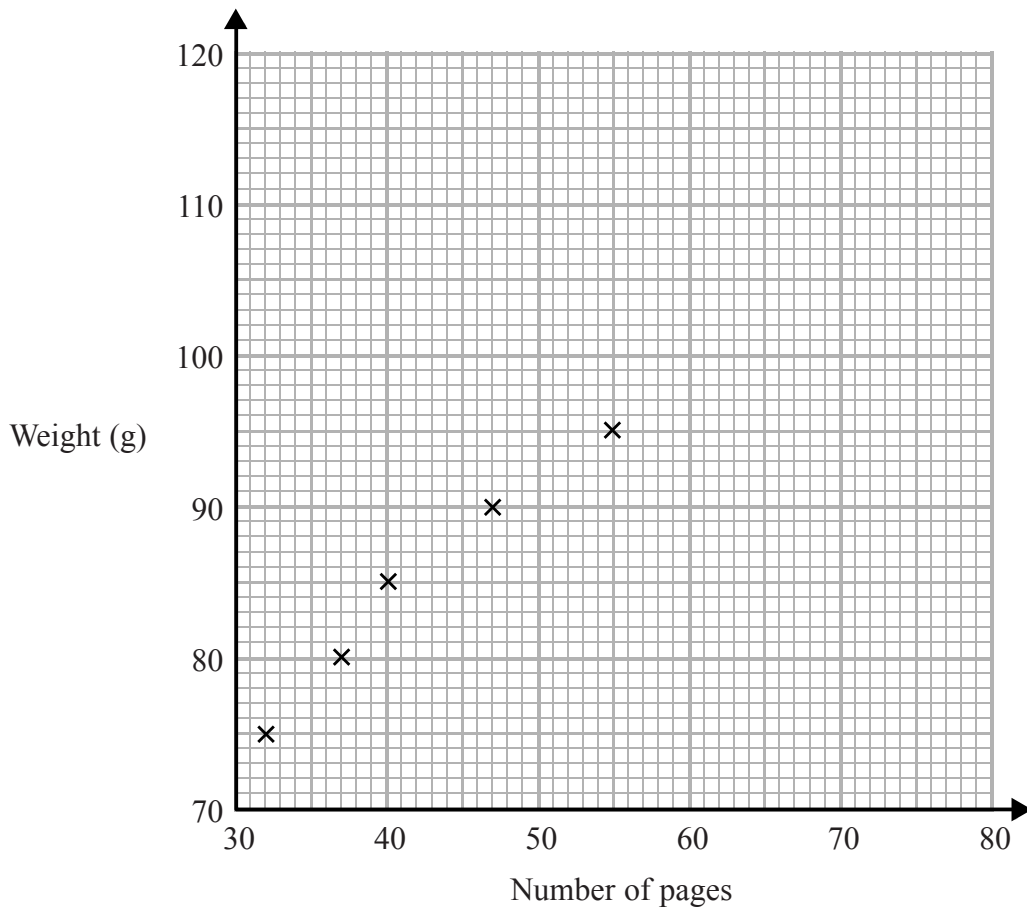
(i) a **Teddy bear** or a **Goldfish**,

(ii) **Another go**.

(Total for Question 17 is 4 marks)



18 The weights of eight magazines and the numbers of pages in the magazines were recorded. The scatter graph and the table give this information for each magazine.



Number of pages	63	70	78
Weight (g)	107	110	117

(a) Show the information in the table on the scatter graph.

(2)

(b) Describe the correlation between the number of pages and the weight.

(1)

A magazine has 66 pages.

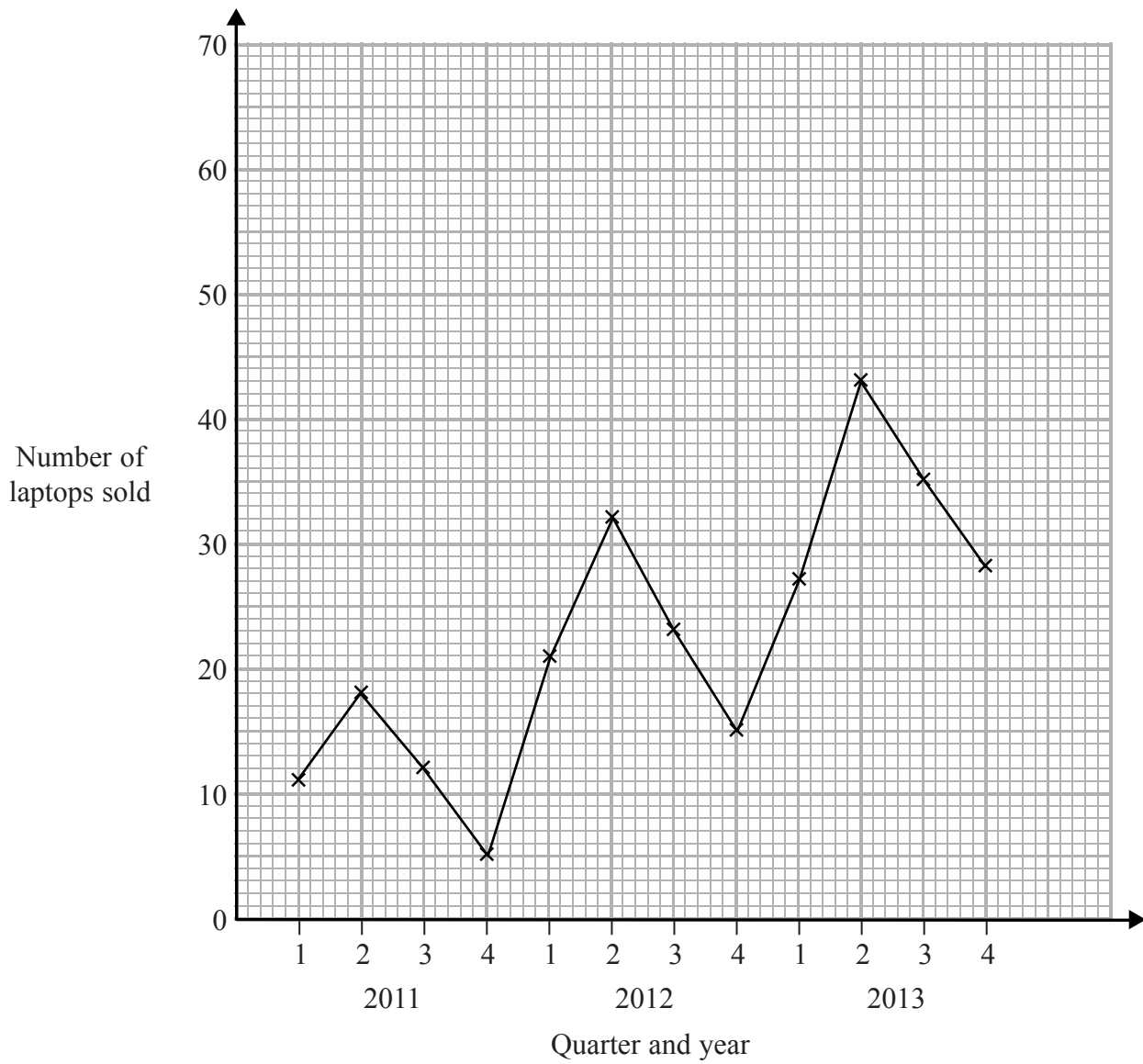
(c) Find an estimate of the weight of this magazine.

(1)

(Total for Question 18 is 4 marks)



19 The time-series graph gives information about the number of laptops sold by an internet company each quarter from 2011 to 2013.



(a) Describe the trend in the number of laptops sold during this period.

(1)

(b) Work out the difference in the number of laptops sold in quarter 4 of 2011 and the number of laptops sold in quarter 4 of 2013.

(2)

(c) Find an estimate for the number of laptops sold in quarter 1 of 2014.

(1)

(Total for Question 19 is 4 marks)

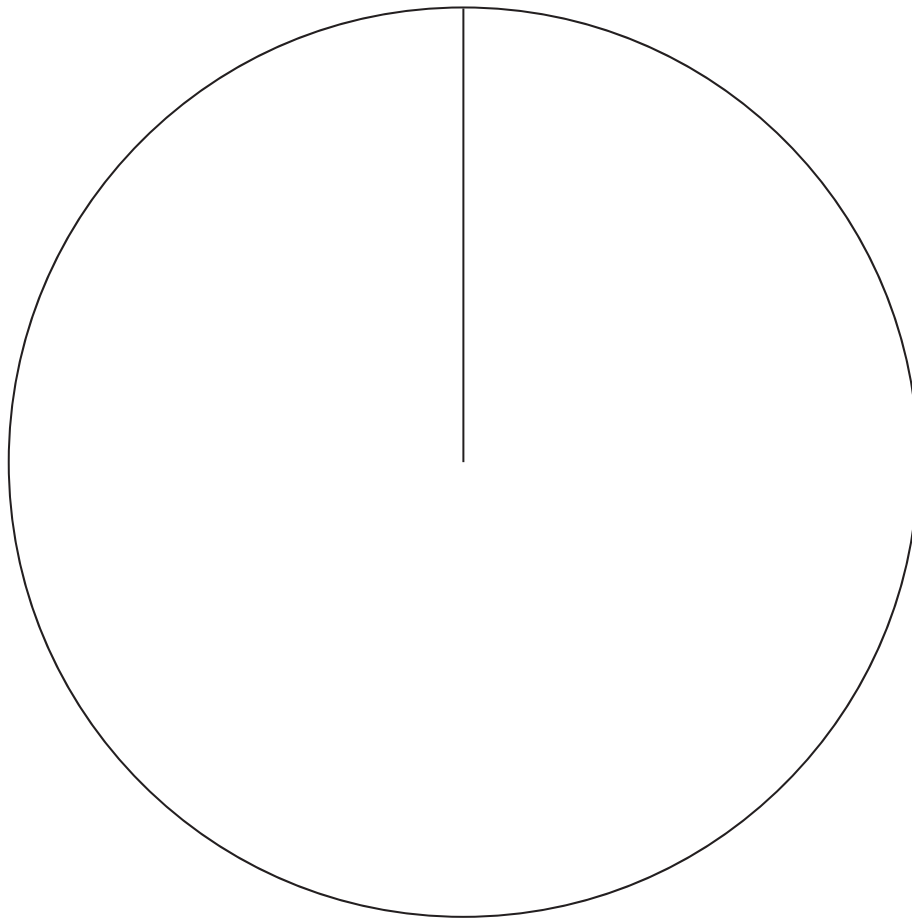


20 Gavin carried out a survey of 40 people to find out the type of film they like the best.

The table gives his results.

Type of film	Number of people
Comedy	10
Action	12
Horror	18

Complete the pie chart to show this information.



(Total for Question 20 is 3 marks)

TOTAL FOR PAPER IS 80 MARKS

