National 5 Lifeskills

Past Paper Questions

Managing Finance and Statistics

Section 1: Finance

John is a foster parent.
He fosters three children.

John wants to buy them some guinea pigs.
He sees this sign at a pet shop.

For Sale
Guinea pigs £14.60 each

Special Offer
Buy 2 guinea pigs and get the third at $\frac{1}{2}$ price

John wants to buy 3 guinea pigs.

(a) How much should John pay for the 3 guinea pigs?

(2)

John sees these prices at the pet shop.

Hutches		Food		Bedding	
Ace Hutch	£59.95	Mega Mix food	£10.95	Straw	£2.95
Basic Hutch	£44.95	Budget food	£7.95	Sawdust	£5.95

John needs

- one hutch
- one bag of food
- one bag of straw
- one bag of sawdust.

He has a voucher that gives him 25% off the price of any hutch.
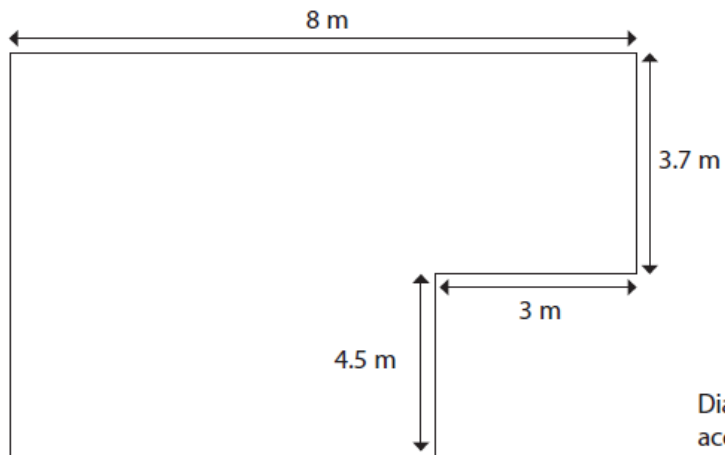
John has £60 to buy these things.

(b) Is £60 enough to buy these things?

(3)

Andy works as a roofer.

Farida has a large garage with a flat roof.
She asks Andy how much he will charge to make a new flat roof.

Andy makes a sketch of the roof showing the lengths of the sides.

8 m

3.7 m

3 m

4.5 m

Diagram **NOT**
accurately drawn

Andy charges £46 per square metre of flat roof.

Farida has a budget of £2000 for the garage roof.

Can Farida afford Andy's charges?

(6)

Mr and Mrs Melton plan to take their 4 children to the Kennedy Cinema.
Mrs Melton finds out this information about ticket prices.

Kennedy Cinema – ticket prices

Weekdays (until 5pm on Friday)

	2D film	3D film
All tickets	£4.50	£6.50

From 5pm on Friday, all day Saturday and all day Sunday

	2D film	3D film
Adults	£6.90	£8.90
Children, students	£5.70	£7.20
Family ticket (2 adults and 2 children)	£24	£30

3D glasses: £1 per pair (all 3D films)

They want to
- go to the cinema on Friday at 18:15
- see a 3D film.

Mr and Mrs Melton need to pay for the tickets and 3D glasses for themselves and their 4 children.

They don't want to spend more than £50

Can Mr and Mrs Melton take their children to see a 3D film at 18:15 on Friday night for less than £50?

(3)

Analysing and interpreting factors affecting income.

Erica works as a masseuse at a health club.

Her March payslip, shown below, is only partly completed.

Name	Employee No.	Tax Code	Month
E. Roe	666	710L	March
Basic Pay	**Overtime Pay**	**Bonus**	**Gross Pay**
£1350	–		
Nat. Insurance	**Income Tax**	**Pension**	**Deductions**
£187·42	£297·59		
			Net Pay

Erica is paid a bonus of £7·25 for each massage she does.

During March she does 88 massages.

Erica pays 6% of her Gross Pay into her Pension.

Calculate Erica's Net Pay for March.

A copy of Logan Pollock's payslip is shown below for one week in February.

Name L. Pollock	Employee No. 027	Tax Code 64L	Week Ending 14/02/2012
Basic Pay £296·00	Overtime Pay £55·50	Bonus —	Gross Pay £351·50
National Insurance £20·04	Income Tax £45·40	Pension £21·09	Deductions £86·53
			Net Pay £264 ·97

Logan worked 40 hours for his basic pay.

If overtime was paid at the rate of "time and a half", calculate how many hours of overtime he worked during that week.

Jack works a basic week of 35 hours.

Any overtime is paid at time and a half.

One week he works for 39 hours and is paid £255·84.

How much is he paid for each hour of **overtime** that he works?

Determining the best deal, given three pieces of information.

Mike wants to take his wife for a balloon flight experience on their wedding anniversary.

He finds these special offers.

Fly High Balloons	Anytime Balloons	Go Ballooning
£155 per person	£138 per person	Fly with a friend
Special offer 40% off	Special offer $\frac{1}{3}$ off	£190 for two people

Choose the cheapest balloon flight experience for Mike and his wife.
What is the total cost? (5)

The balloon flight experience includes

- meeting the pilot for a briefing at the launch site (15 min)
- inflating the balloon (20 min)
- the flight (up to 1.5 hours)
- deflating the balloon and packing it away (40 min)
- presentation of certificates (10 min)
- minibus back to the launch site (30 min).

Mike and his wife are going to meet the pilot for the briefing at 17:00

Their journey home from the launch site takes 45 minutes.
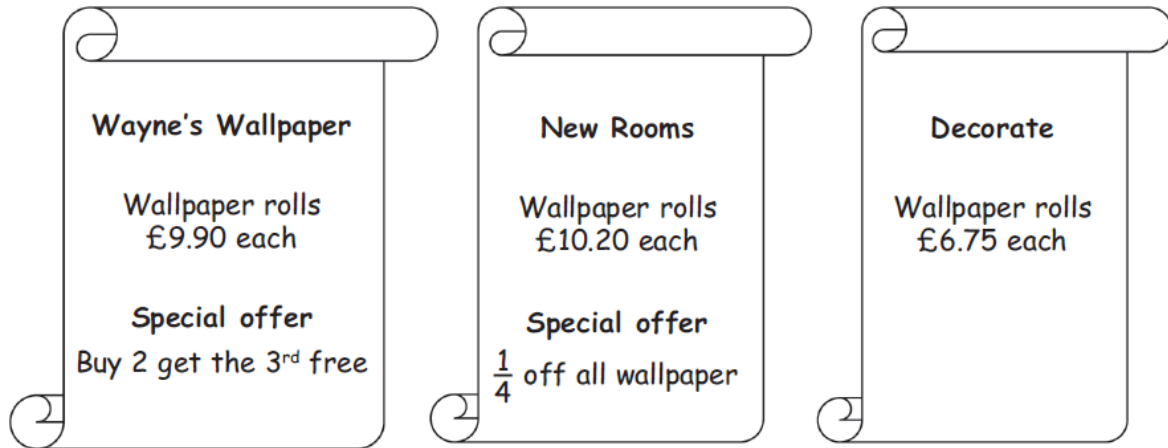
They have booked a babysitter until 9 pm

Will they be home by 9 pm? (3)

Joe is also going to put wallpaper on the walls in the lounge.

He needs to buy 12 rolls of the wallpaper for the lounge.

The wallpaper is on sale in three shops.

Wayne's Wallpaper

Wallpaper rolls
£9.90 each

Special offer
Buy 2 get the 3rd free

New Rooms

Wallpaper rolls
£10.20 each

Special offer
$\frac{1}{4}$ off all wallpaper

Decorate

Wallpaper rolls
£6.75 each

Joe wants to spend as little as possible on the wallpaper.

(b) Which shop should Joe buy the 12 rolls of wallpaper from?

(5)

Debbie works for a supermarket.
She is going to a meeting in Leeds.

The total distance she has to travel is 260 miles.

Debbie has to work out the cheapest way to travel.

Option A: travel by train.
• The total cost to travel by train is £162

Option B: travel in her own car.
• She can claim 45p per mile.

Option C: hire a car.
• The cost of car hire is £58.46
• This car uses 1 litre of petrol for every 13 miles.
• The cost of petrol is 145.9p per litre.

Debbie must use the cheapest option to travel the 260 miles for the meeting.

Which option should she take?

(6)

A superstore has three kinds of paint.

(a) Using the information shown, explain why Coverite appears to give the best value for money.

SPREADITT 2 LITRES £3.99

TUFFCOTE 3 LITRES £4.99

COVERITE 4 LITRES £6.49

(b) On the backs of the tins is more information. Using this additional information, decide which paint is the best value for money. You must show all your working.

SPREADITT 1 LITRE COVERS 16m²

TUFFCOTE 1 LITRE COVERS 14 m²

COVERITE 1 LITRE COVERS 13 m²

Converting between several currencies.

Robert goes on holiday to France.
The exchange rate is £1 = 1.27 euros.

He changes £1250 into euros.

He spends 1200 euros while in France.
When he returns to England he changes the remaining euros back into £.
The exchange rate is now £1 = 1.14 euros.

Calculate how many £, to 2 decimal places, he receives.

Monthly repayments for £10 000 loan		
	With Protection	Without Protection
Safeloan	£226·72	£191·26
Moneyback	£228·41	£196·41
Quickloan	£229·74	£200·71

The table above shows the monthly repayments charged by three companies for a loan of £10 000 repaid over 5 years.

Jennifer takes a £10 000 loan, over 5 years, with protection, from Moneyback.

Calculate the cost of her loan.

Part of Wendy's credit card statement is shown below.

Credit Limit = £1000

Balance from previous statement	£25·78
Interest	£2·24
Cliff Petrol Station	£36·45
Save More Supermarket	£64·17
H R Brown	£13·25
Total Balance	£A
Minimum repayment	£B

Minimum repayment = 2·5% of balance or £5, whichever is greater

Calculate the values of A and B.

The Bank of Salamander offers loans to its customers.

The table shown below can be used to calculate loan repayments.

		60 months	48 months	24 months
		Monthly repayment (£)	Monthly repayment (£)	Monthly repayment (£)
With payment protection	£20 000	467·85	555·43	998·23
	£15 000	351·89	417·57	749·67
	£7500	177·94	210·79	376·84
Without payment protection	£20 000	388·65	471·72	888·47
	£15 000	292·49	354·79	667·35
	£7500	148·29	179·40	335·68

Amy requires to borrow £15 000 to buy a car.

How much will the loan cost her if she repays it over 24 months, **without payment protection**?

Below is the summary part of Geetha's Credit Card statement at the end of May.

Briggs Bank

CREDIT CARD STATEMENT

Summary as at 21 May 2011

Credit Limit	£4000	
Available Credit	£3760	
Balance from previous statement		£0·00
New Transactions		£240·00
Interest		£0·00
Balance owed		£240·00
Minimum payment due		£7·20
Payment due date		15 June 2011

Interest will be charged at 1% per month on any outstanding balance.

Geetha pays the minimum payment.

She does not use the credit card again.

What is the "Balance owed" in her next statement?

The table below gives the **monthly** repayments from three different banks on a £10 000 loan repaid over **five years**.

Name of Bank	Monthly Repayments	
	With payment protection	**Without payment protection**
Savewell	£245·39	£214·39
Finesave	£260·58	£205·65
Wisespend	£263·17	£214·70

Emily borrowed £10 000 and paid it back over five years. The cost of the loan was £2339. Which bank was the loan from and did she take it with or without payment protection?

Section 2: Statistics

Using a combination of statistics to investigate risk and its impact on life.

Diagrams A and B show a histogram and a cumulative frequency curve respectively.
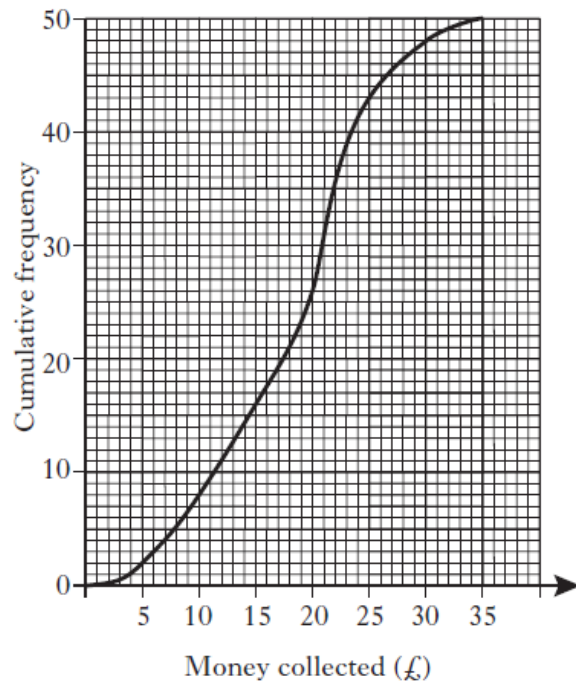
Diagram A
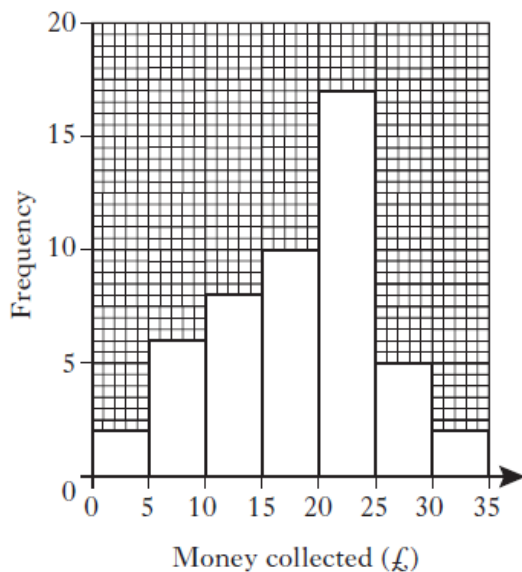
Diagram B

(a) Using the data in Diagram A, copy and complete the frequency table below.

Money collected (£)	Frequency
0·01 – 5·00	
5·01 – 10·00	
10·01 – 15·00	
15·01 – 20·00	
20·01 – 25·00	
25·01 – 30·00	
30·01 – 35·00	

(b) Jim thinks that both Diagram A and Diagram B may have been drawn using the same set of data.

Is he correct?

Explain your answer, showing all your evidence.

A group of people attended a course to help them stop smoking.

The following table shows the statistics before and after the course.

	Mean number of cigarettes smoked per person per day	Standard deviation
Before	20·8	8·5
After	9·6	12·0

Make **two** valid comments about these results.

A driving examiner looks at her diary for the next 30 days.

She writes down the number of driving tests booked for each day as shown below.

Number of tests booked	0	1	2	3	4	5	6
Frequency	1	1	3	2	9	10	4

(a) Find the median for this data.

(b) Find the probability that **more than** 4 tests are booked for one day.
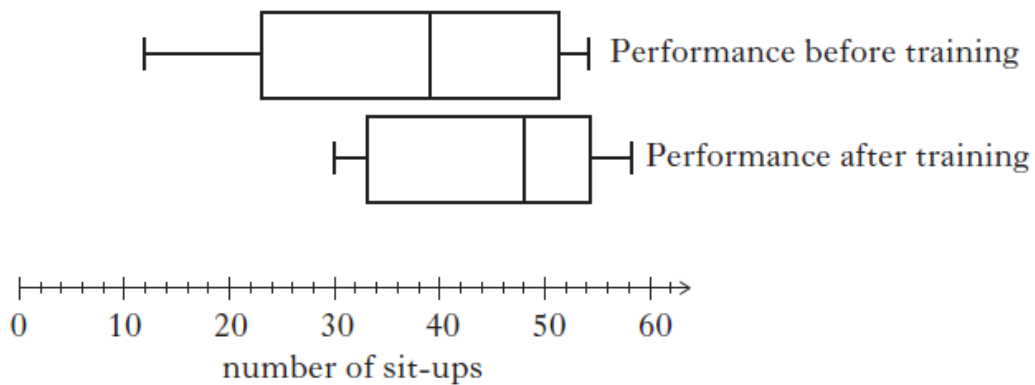
Before training, athletes were tested on how many sit-ups they could do in one minute.

The following information was obtained:

lower quartile (Q_1)	23
median (Q_2)	39
upper quartile (Q_3)	51

After training, the athletes were tested again.

Both sets of data are displayed as boxplots.

Make **two** valid statements to compare the performances before and after training.

The stem and leaf diagram shows the number of minutes on average spent on homework per night by a group of first year pupils.

```
1 | 0 5 5 5
2 | 0 1 2 2 3 5 5 8 9
3 | 0 5 5 6 6 7 8 9 9 9
4 | 2 4 4 5 6 7
5 | 0
```

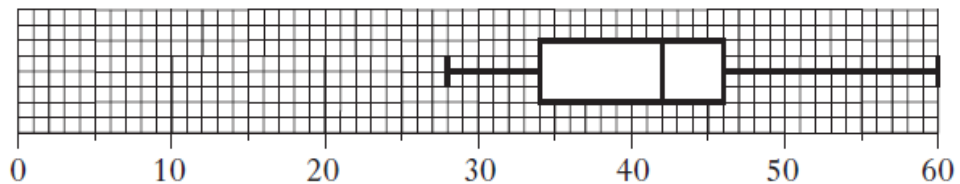n = 30   1 | 0 represents 10 minutes

(a) Using the above data find:

   (i) the median;

  (ii) the lower quartile;

 (iii) the upper quartile.

(b) Draw a boxplot to illustrate this data.

(c) A group of fourth year pupils was surveyed to find out how many minutes on average they spent on homework per night. The boxplot below was drawn for this data.

Compare the two boxplots and comment.

A sample of voters was asked how they intended to vote at the next election. The responses are shown below.

Party	Percentage
Scottish National Party (SNP)	35%
Labour (Lab)	30%
Liberal Democrat (Lib Dem)	15%
Conservative (Con)	10%
Others	10%

Construct a pie chart to illustrate this information.

Show all of your working.

Harry often plays golf and the scores for some of his games are recorded below.

$$84 \qquad 78 \qquad 87 \qquad 80 \qquad 81$$

(*a*) For this sample calculate:

    (i) the mean;

    (ii) the standard deviation.

    Show clearly all your working.

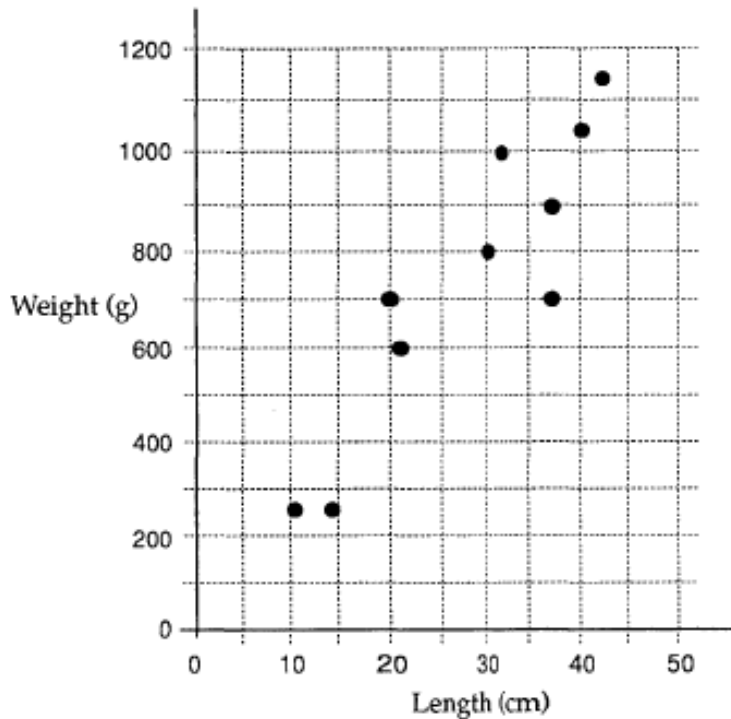(*b*) His partner for these games is Tony, whose scores are listed below.

$$104 \qquad 98 \qquad 107 \qquad 100 \qquad 101$$

Write down the mean and standard deviation of Tony's scores.

A research team visits a remore island. As part of a conservation exercise the weight and length of each of ten birds of one particular species are taken.
The results are shown on the scattergraph below.

(a) What does the scattergraph tell you about the relationship between the heights and weights of these birds?

(b) Draw a best fitting straight line on the scattergraph.

(c) Another bird of the same species has length 26 cm.
Use your line to estimate the weight of this bird.
(Show clearly on the diagram how you arrive at your answer).

Mr Davies sells umbrellas.

The scatter graph shows some information about the number of umbrellas he sold and the rainfall, in cm, each month last year.
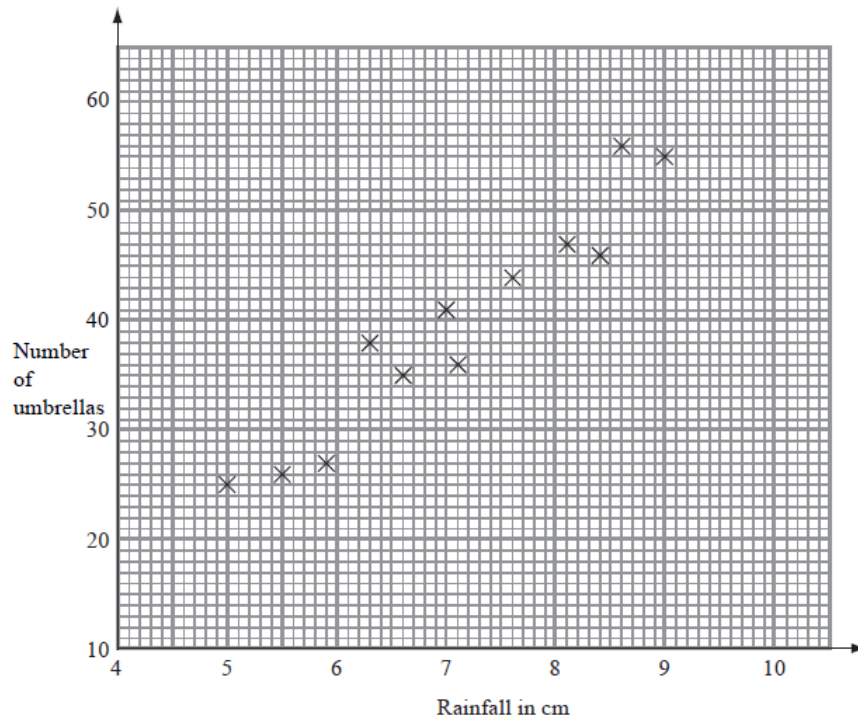
In January of this year, the rainfall was 6.1 cm.

During January, Mr Davies sold 33 umbrellas.

(a) Show this information on the scatter graph.

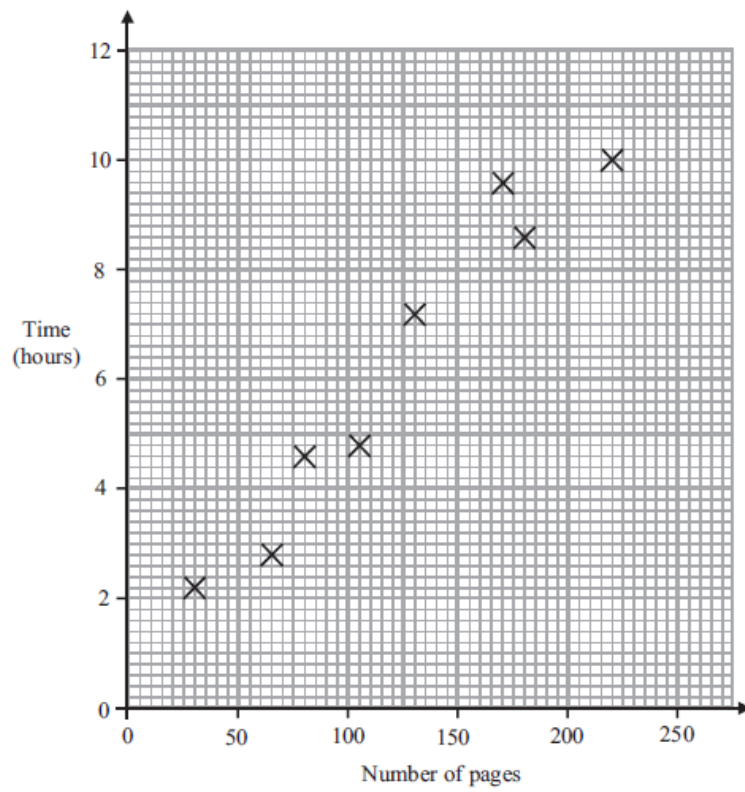(b) What type of correlation does this scatter graph show?

In February of this year, Mr Davies sold 39 umbrellas.

(c) Estimate the rainfall for February.

Sophie reads eight books.

For each book she recorded the number of pages and the time she takes to read it.

The scatter graph shows information about her results.

(a) Describe the relationship between the number of pages in a book and the time Sophie takes to read it.
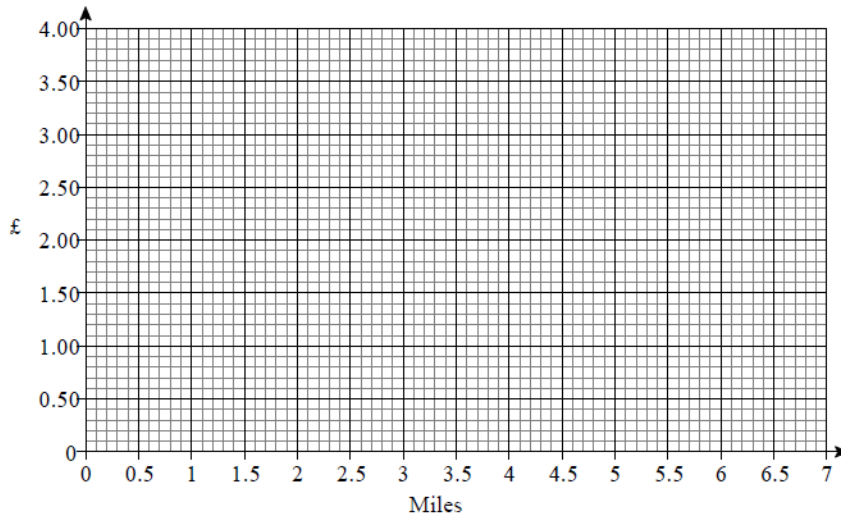

Sophie reads another book.
The book has 200 pages.

(b) Estimate the time it takes Sophie to read it.

The table shows the cost and length of different tram journeys across a city.

Length of journey (miles)	1.8	2.1	2.2	2.5	3.2	3.7	4.0	4.6	5.8	6.4
Cost of journey (£)	0.90	0.80	1.50	1.60	2.00	2.20	2.40	2.90	3.10	3.40

(a) Draw a scatter diagram for the data on the grid below.

(b) Estimate the cost of tram journey of length 5 miles.
Give your answer to the nearest ten pence.