



## GCSE Foundation 22

*Handling Data*

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33 minutes



33 marks

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*Sampling and collecting*

**Q1.** A grocer has 100 boxes of strawberries.

He weighs 10 of the boxes.

Which **three** words describe the data he collects?  
Circle your answers.

continuous      discrete      sample      primary      secondary

(Total 2 marks)

**Q2.** John buys a phone.  
He looks at the cost of 60 applications (apps).

Cost of application	Number of applications
free (0p)	30
59p	16
99p	5
£1.29	2
£1.49	1
£1.99	6

(a) John buys all the applications costing £1.99

How much does he pay?

.....

Answer £ .....

(2)

(b) What fraction of the 60 applications are free?  
Give your answer in its simplest form.

.....

Answer .....

(2)

(c) What percentage of the 60 applications cost £1.99?

.....

.....

Circle the correct answer.

6%      10%      16%      60%

(1)

- (d) John wants to know the make of phone used by people in his class.

Write down a suitable data collection method.

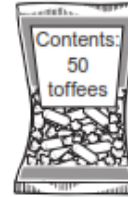
Answer .....

(1)

(Total 6 marks)

- Q3.** A company makes bags of toffees.

The company checks that the bags contain 50 toffees.



- (a) The number of toffees in a sample of 11 bags is

51 50 51 51 52 43 50 50 51 51 50

- (i) Write down the mode.

Answer .....

(1)

- (ii) Work out the median.  
You **must** show your working.

.....

.....

Answer .....

(2)

- (iii) Work out the mean.

.....

.....

Answer .....

(3)

- (b) The company claims there are 50 toffees in a bag.

- (i) Give a reason why this claim seems fair.

.....

.....

(1)

- (ii) Give a reason why this claim seems unfair.

.....  
.....

(1)

- (c) The company uses the first 11 bags produced each Monday to check the contents.

State **two** ways this method of sampling can be improved.

1 .....

.....

2 .....

.....

(2)

(Total 10 marks)

**Q4.** Clive works for the local council.

One of his jobs is to check that taxi companies charge reasonable fares.

Each week he checks 10 taxi journeys with local companies.

- (a) Design a suitable observation sheet for Clive to use to record the fare and distance of each journey.

(2)

- (b) Clive expects strong positive correlation between the length of the journey and the fare charged.

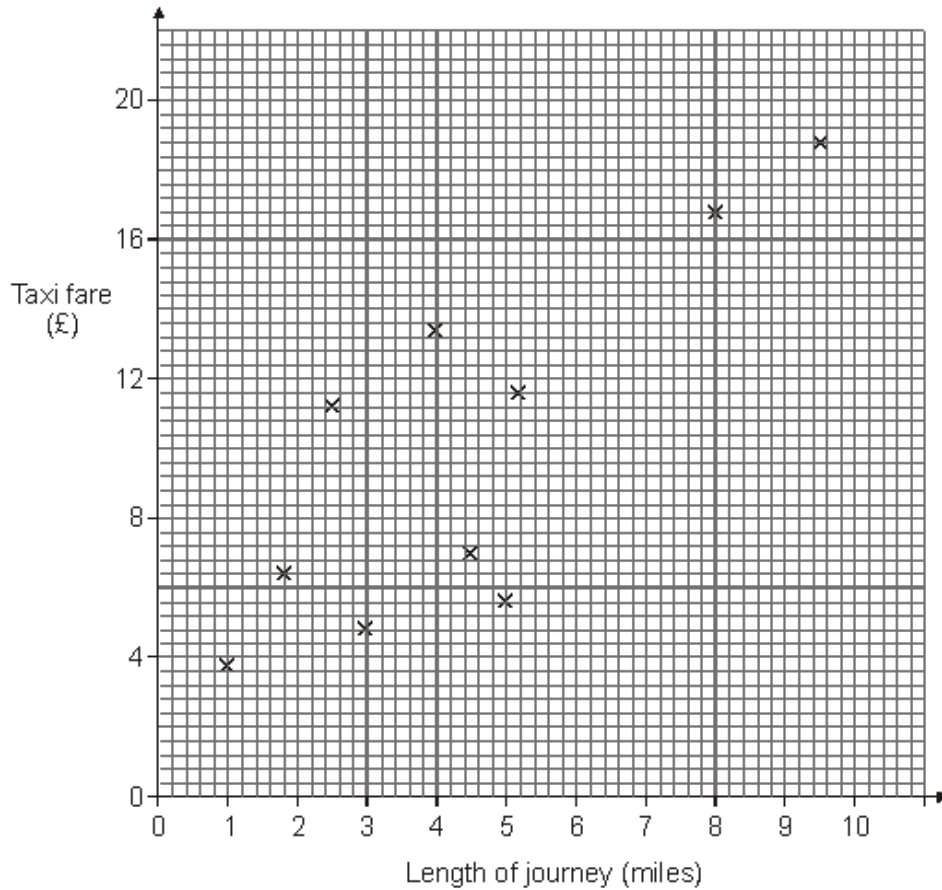
Explain why he might expect this.

.....

.....

(1)

(c) The scatter diagram shows the results for a week in January 2009.



(i) What was the fare for the 3-mile journey?

Answer £ .....

(1)

(ii) What would you expect to pay for a 7-mile journey?

Show how you obtain your answer.

Answer £ .....

(2)

(d) Does the data support Clive's view about the expected correlation between the length of journey and the fare?

Give a reason for your answer.

.....

.....

(1)

(Total 7 marks)

**Q5.** A doctor wants to encourage her patients to take more exercise.  
 The doctor has approximately 500 patients.  
 She decides to do a survey about what exercise her patients take.

(a) This is a question in the survey.

**Q** Do you exercise?

**A** Tick a box

Yes ☐ No ☐ Sometimes ☐ Every day ☐

(i) Give a criticism of the question.

.....

.....

.....

(1)

(ii) Give a criticism of the response section.

.....

.....

.....

(1)

(b) This is another question in the survey.

**Q** How many miles did you walk last week?

Give a suitable response section for this question.

(1)

- (c) (i) The doctor decides to use one of three methods to do the survey.

Method 1 Give the survey to the first 50 patients seen in a week

Method 2 Choose 50 patients at random

Method 3 Choose 26 patients, picking one whose surname begins with each letter of the alphabet

Give a reason why method 3 is **not** suitable.

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

(1)

- (ii) Which of the other two methods for doing the survey will give the most reliable results?

Give a reason for your choice.

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

(1)

(Total 5 marks)

- Q6.** Jane conducts a survey of the favourite colours of the students in her class. She records the results.

Male	Red	Female	Yellow
Male	Yellow	Female	Red
Male	Red	Female	Green
Female	Green	Female	Green
Female	Red	Male	Red
Male	Green	Male	Yellow
Male	Green		

Record the results in a two-way table.

(Total 3 marks)

