



General Certificate of Secondary Education
2022

Centre Number

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Candidate Number

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Statistics

Unit 1
Foundation Tier



GST11

[GST11]

TUESDAY 14 JUNE, AFTERNOON

TIME

1 hour 30 minutes.

INSTRUCTIONS TO CANDIDATES

Write your Centre Number and Candidate Number in the spaces provided at the top of this page.

Write your answers in the spaces provided in this question paper.

Answer **all ten** questions.

Any working should be clearly shown in the spaces provided since marks may be awarded for partially correct solutions.

You **may** use a calculator for this paper.

INFORMATION FOR CANDIDATES

The total mark for this paper is 80.

Figures in brackets printed down the right-hand side of pages indicate the marks awarded to each question or part question.

You should have a calculator, ruler, compasses and protractor.

There is no formula sheet for this examination.

For Examiner's use only	
Question Number	Marks
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
Total Marks	

Quantitative	Discrete	Qualitative	Continuous
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(d) Use a word from the box above to complete this statement:

The colour of car is a _____ variable. [1]

Examiner Only	
Marks	Remark

BLANK PAGE
(Questions continue overleaf)

- 3 Phil is the manager of a football team. He recorded the number of goals scored by his team over the last 24 matches.

Here are his results.

1	0	2	1	2	1
1	0	0	1	0	1
3	3	0	0	3	0
0	1	1	0	1	2

- (a) Complete the Tally and Frequency columns in the table below.

Number of goals	Tally	Frequency	
0			
1			
2			
3			

[2]

Phil calculated the mean number of goals scored per match to be 1

- (b) Show how Phil arrived at this value.

You may use the blank column in the table to help with your working.

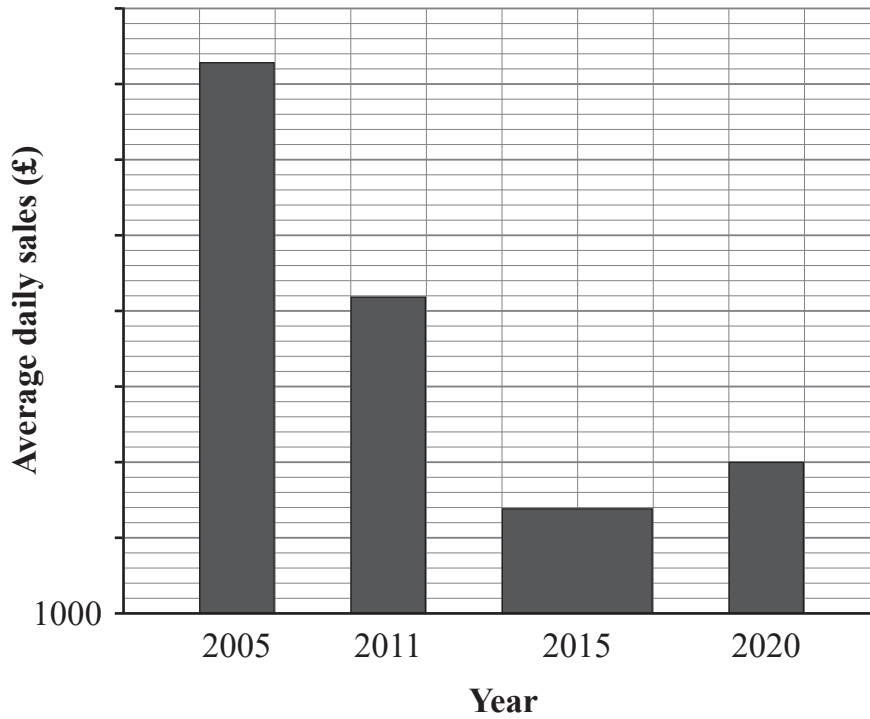
[3]

Examiner Only	
Marks	Remark

- 4 Terry has drawn a chart to show the change in average daily sales at his shop every five years since 2005

Examiner Only	
Marks	Remark

Average daily sales, 2005–2020



Write down four problems with how Terry has presented his chart.

1. _____

_____ [1]

2. _____

_____ [1]

3. _____

_____ [1]

4. _____

_____ [1]

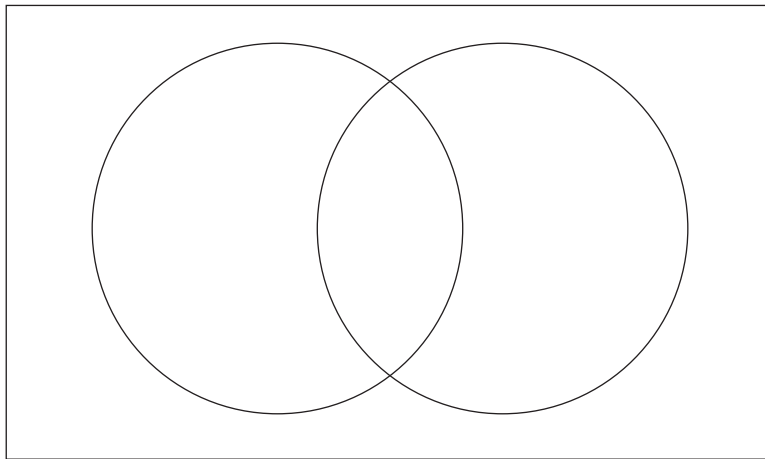
5 In a survey, 60 adults were asked whether they liked tea or coffee.

Half of them said they liked both tea and coffee.

One quarter said they did not like tea or coffee.

Seven said they liked coffee but not tea.

(a) Complete the Venn diagram below to illustrate this information.



[5]

(b) Write down the number of adults who said they liked tea only.

Answer _____ [1]

One of the adults who took part in the survey is selected at random.

(c) Find the probability that this person likes tea or coffee or both.

Answer _____ [3]

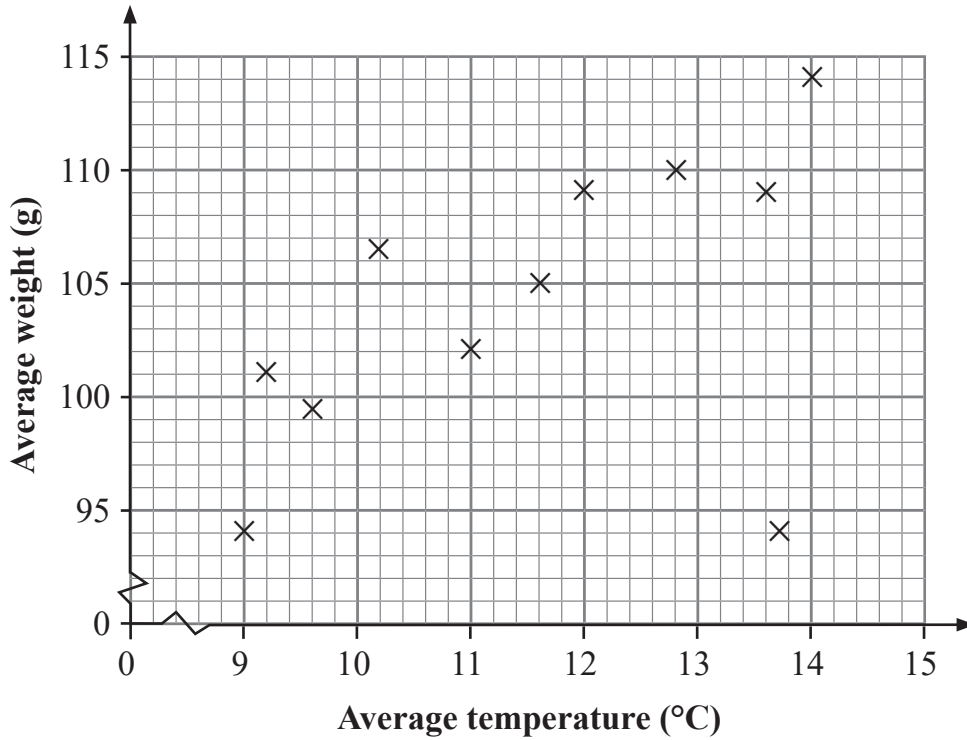
Examiner Only

Marks Remark

6 Lily is investigating how the weather affects the weight of the apples which grow on the apple tree in her garden.

Over the past 11 years, Lily recorded the average temperature in May and the average weight of all apples she picked from her apple tree that year.

Her results are shown on the diagram below.



(a) Write down the name of this type of diagram.

_____ [1]

(b) What is the explanatory variable for Lily’s investigation?

_____ [1]

One of the results on the scatter diagram is an outlier.

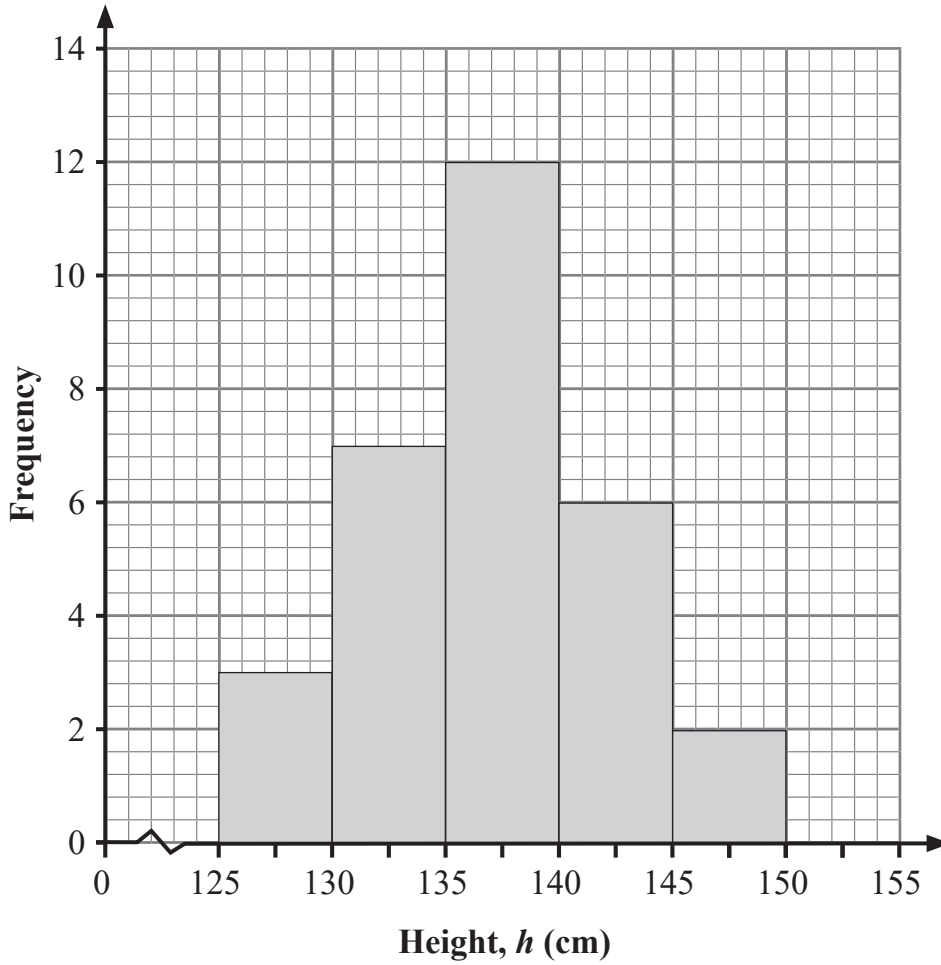
(c) Draw a circle around this result.

[1]

Examiner Only	
Marks	Remark

7 A group of 30 children are going on a trip to a fairground.

The heights, in cm, of all 30 children are measured and the results are given in the histogram below.



(a) Use the histogram to complete the frequency table below.

Height, h (cm)	Frequency
$125 \leq h < 130$	3
$130 \leq h < 135$	

[4]

Examiner Only	
Marks	Remark

Only children taller than 135 cm are allowed to use the slide.

(b) How many children in the group are allowed to use the slide?

Answer _____ [2]

Orla says that the range of heights of the children is 25 cm because
 $150 - 125 = 25$

(c) Give a reason why Orla may not be correct.

_____ [2]

Examiner Only	
Marks	Remark

Roy spins the spinner 300 times and records the result each time.

His results are shown in the table below.

Score	1	2	3	4	5
Frequency	55	54	53	83	55
Estimated probability	0.183				

(c) Complete the estimated probability for each score in the table above, giving each answer correct to three decimal places, where necessary. [3]

(d) Give two conclusions which Roy may make based on the estimated probabilities in the table.

1. _____

_____ [2]

2. _____

_____ [2]

Examiner Only	
Marks	Remark

- 9 Melanie recorded how long she spent studying each Saturday over a period of time.

The table below shows the frequencies for the number of hours Melanie spent studying.

Time, t (hours)	Frequency	Cumulative frequency
$0 \leq t < 2$	4	
$2 \leq t < 4$	5	
$4 \leq t < 6$	18	
$6 \leq t < 8$	8	
$8 \leq t < 10$	5	

- (a) Circle two words from the list below which describe Melanie's time spent studying.

Categorical

Response

Quantitative

Qualitative

Continuous

Discrete

[2]

- (b) Complete the cumulative frequency column in the table above. [2]

- (c) How many Saturdays are represented in Melanie's data?

Answer _____ [1]

- (d) From the data in the table, write down:

- (i) the modal class;

Answer _____ hours [1]

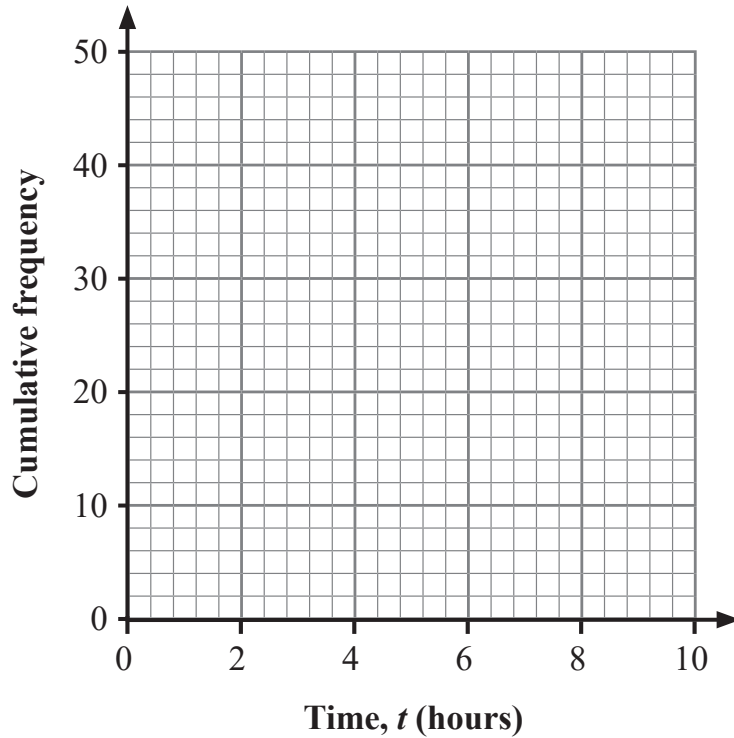
- (ii) the median class.

Answer _____ hours [1]

Examiner Only

Marks Remark

- (e) On the axes below, draw a cumulative frequency diagram for the data in the table on page 16.



[3]

Melanie chose to use a cumulative frequency diagram rather than a histogram to display her data.

- (f) Give two advantages to Melanie of using a cumulative frequency diagram to display her data rather than a histogram.

1. _____

 _____ [1]

2. _____

 _____ [1]

- (g) Give one advantage to Melanie of using a histogram to display her data rather than a cumulative frequency diagram.

 _____ [1]

Examiner Only	
Marks	Remark

10 The table below shows some of the prices, in pence, and index numbers for one litre of diesel in Northern Ireland on 1 January between 2016 and 2020

The base year is 2016

Year	2016	2017	2018	2019	2020
Price (p)	114.6	101.7	121.0	122.9	
Index number	100	88.7	105.6		112.5

The index number for 2018 is 105.6

(a) Explain what is meant by this value.

_____ [3]

(b) Calculate the index number for 2019

Answer _____ [3]

(c) Find the price of one litre of diesel on 1 January 2020

Answer _____ p [2]

Examiner Only	
Marks	Remark

THIS IS THE END OF THE QUESTION PAPER

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