



Rewarding Learning

General Certificate of Secondary Education
2022

Centre Number

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Candidate Number

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Statistics

Unit 2
Foundation Tier



GST21

[GST21]

FRIDAY 24 JUNE, MORNING

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 eleven** 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.

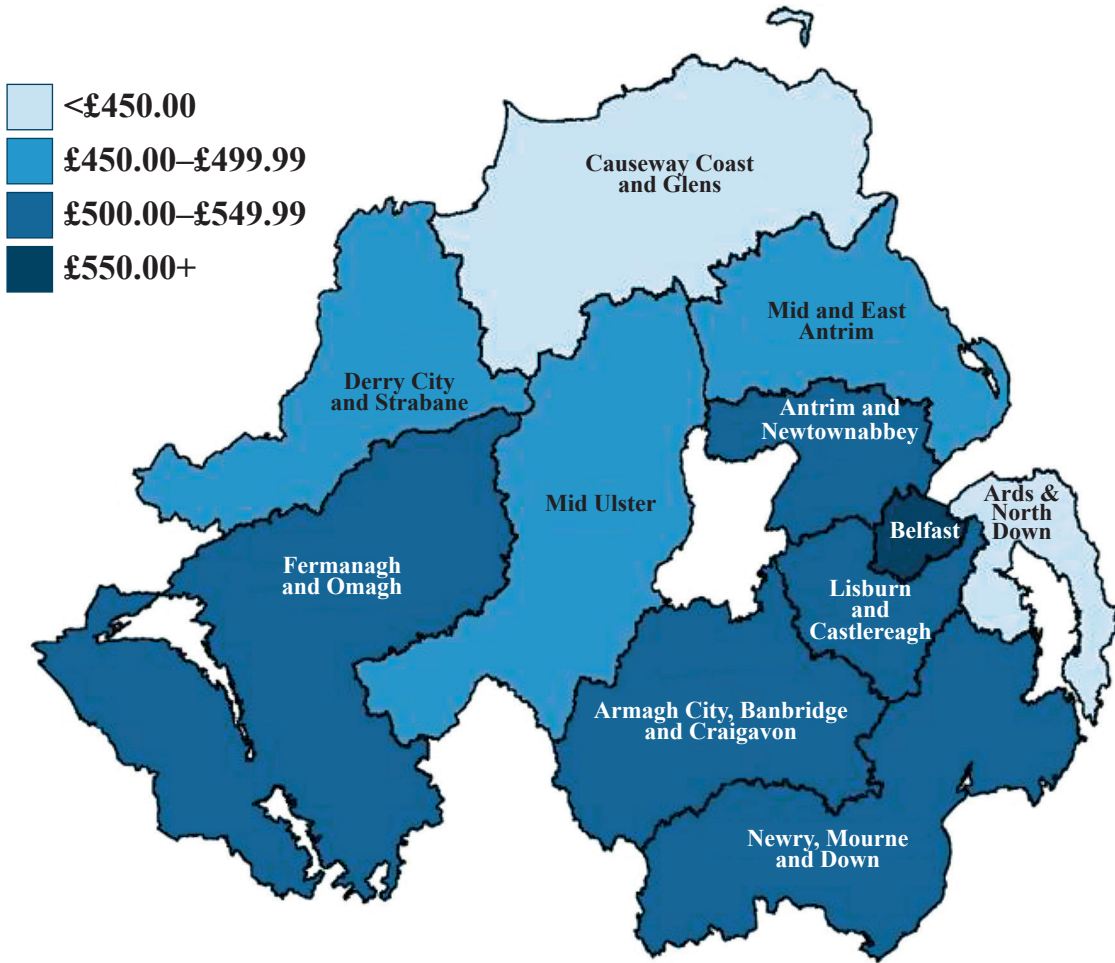
There is no formula sheet for this examination.

For Examiner's use only	
Question Number	Marks
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
Total Marks	

Answer **all** questions

Examiner Only	
Marks	Remark

1 The diagram below shows the median gross weekly earnings for full-time employees in Northern Ireland by place of work.



(a) Write down the median gross earnings range for Mid Ulster.

Answer _____ [1]

(b) Which area has the greatest median gross earnings?

_____ [1]

Noel says that according to the chart, people who live in either the Causeway Coast and Glens or Ards and North Down areas earn less than everyone else.

(c) Give two reasons why Noel may not be correct.

1. _____
_____ [1]

2. _____
_____ [1]

Examiner Only	
Marks	Remark

A sixth child, Fred, collected £18 for the sponsored walk.

(e) Why would it be difficult to represent Fred's amount on this pictogram?

[2]

Examiner Only	
Marks	Remark

Leah wants to distribute her questionnaire on social media to university students as she thinks that most of them will be in the correct age range.

Shannon tells Leah that her results will be biased if she does this.

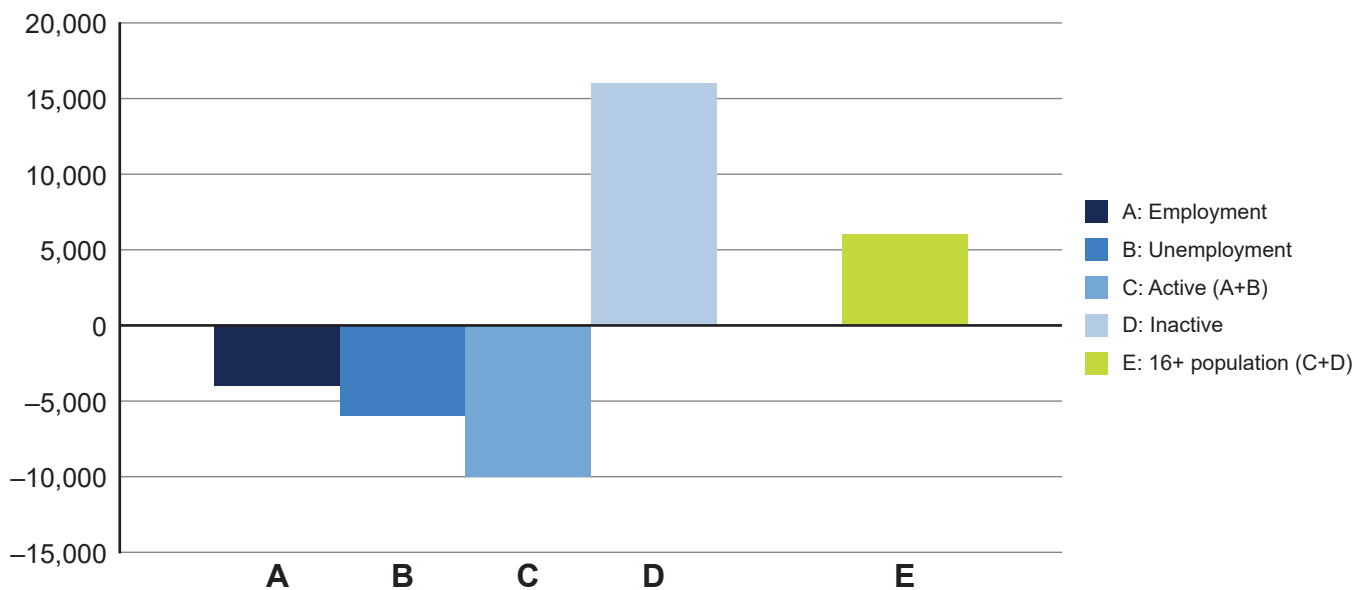
(c) Do you agree or disagree with Shannon? Explain your answer.

[2]

Examiner Only	
Marks	Remark

4 The chart below displays the estimated changes in the Northern Ireland labour market structure for the period of one year to June 2020

NI labour market structure (16+): change over year



Note: figures rounded so may not sum

(a) How many more people were estimated to be economically inactive at the end of the year shown?

Answer _____ [1]

(b) What is the estimated fall in unemployment during the year shown?

Answer _____ [1]

(c) Give a possible reason why there has been a fall in both employment and unemployment.

 _____ [1]

Examiner Only	
Marks	Remark

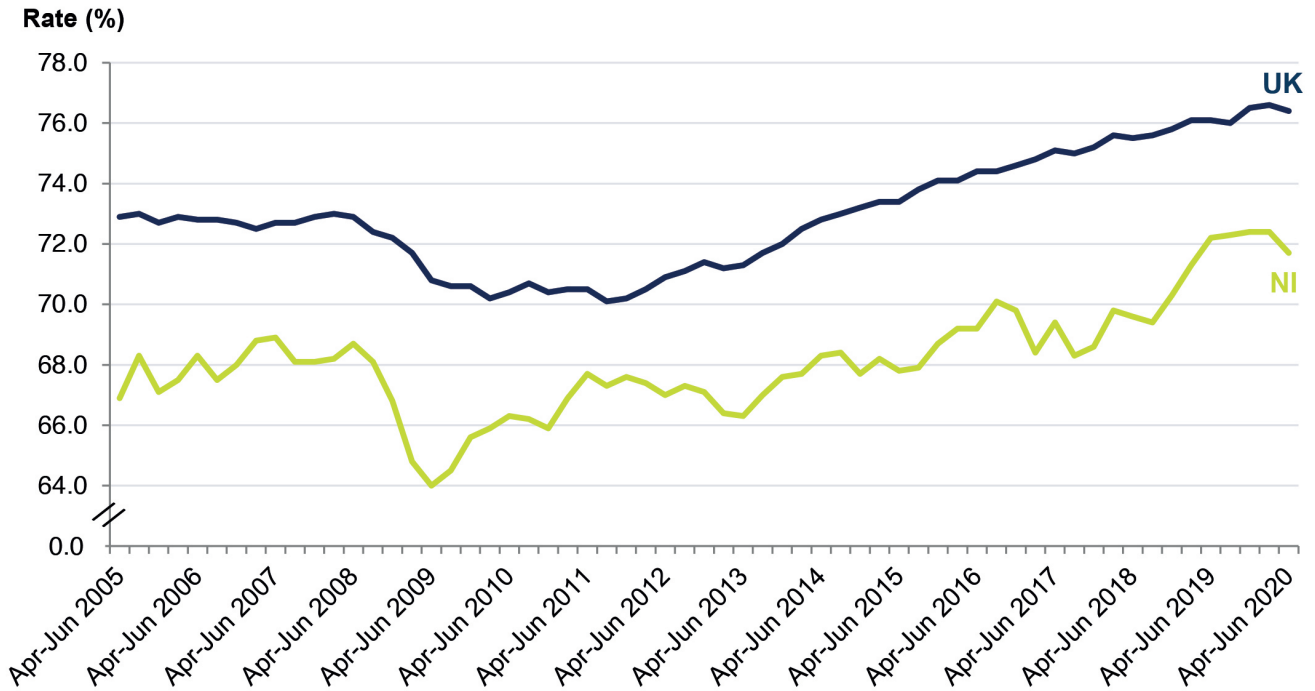
(d) Why are the figures displayed in the graph considered to be estimates?

[2]

Examiner Only	
Marks	Remark

6 The graph below shows the employment rate for the UK and Northern Ireland between April–June 2005 and April–June 2020

Seasonally adjusted employment rate (16–64), April–June 2005 to April–June 2020



(a) Between which two years did the Northern Ireland employment rate fall by the greatest percentage?

_____ and _____ [1]

(b) In which year was the employment rate in Northern Ireland closest to the overall UK employment rate?

Answer _____ [1]

(c) Describe the general trend in employment rate for the UK between April–June 2012 and April–June 2020

_____ [1]

(d) Which one of the lines shows more variation in employment rate?

Tick the correct box:

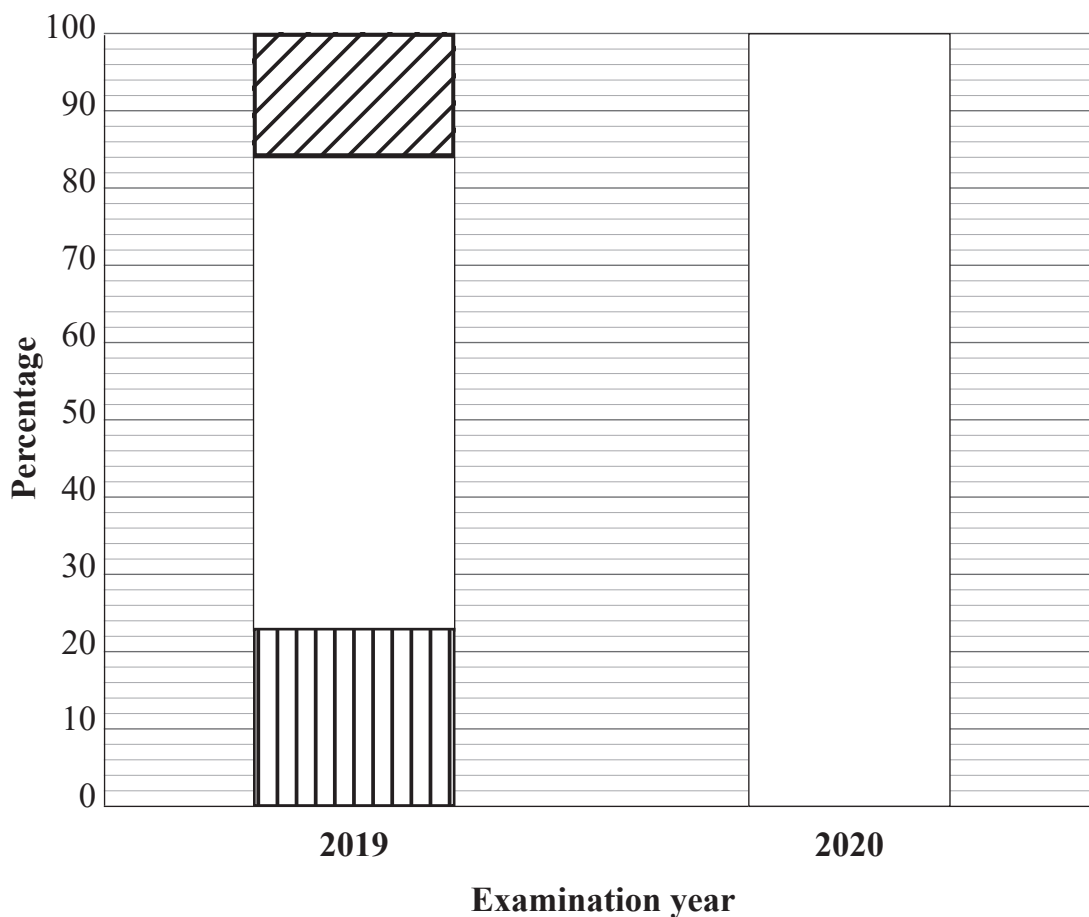
UK NI [1]

Examiner Only	
Marks	Remark

- 7 The table below shows the proportions of students who obtained Distinction, Merit and Pass certificates in some piano examinations in 2019

	Pass	Merit	Distinction
2019	23%	61%	16%

In the 2020 piano examinations, half of the students obtained a Merit, 28% obtained a Distinction and the remainder of the students obtained a Pass.



Key:







Examiner Only

Marks Remark

- 8 A teacher carried out a survey among pupils in his school who had part-time jobs about what industry they worked in.

He waited at the school entrance and asked 60 pupils whom he recognised.

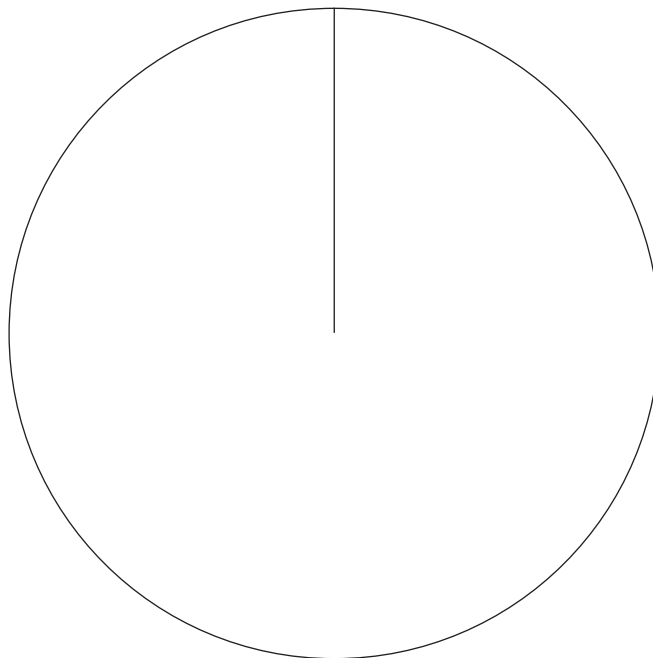
- (a) Write down the name of this method of sampling.

_____ [1]

The results of the survey are given in the table below.

Industry	Number of pupils	
Hospitality	9	
Administration	4	
Manufacturing	13	
Healthcare	19	
No part-time job	15	

- (b) Draw a pie chart to illustrate the data in the table.



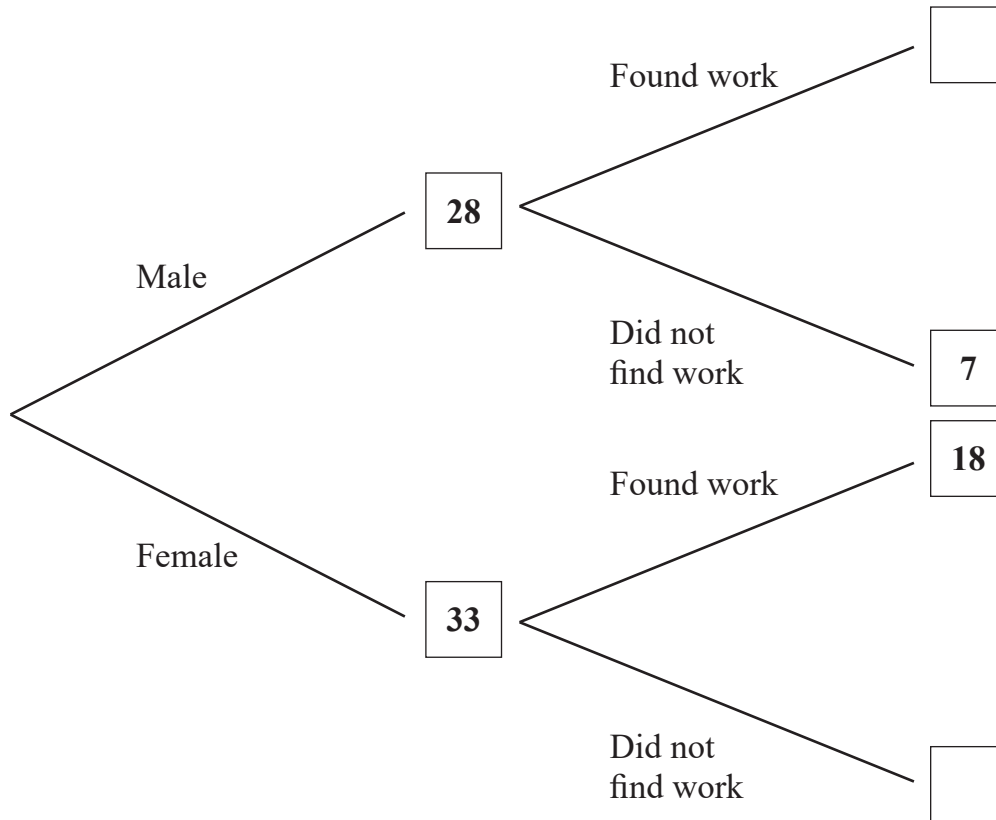
[4]

Examiner Only

Marks Remark

- 9 An employment agency keeps records about the number of clients who register with it and how many of them find work.

The frequency tree below shows the gender of a group of clients who registered with the agency during one week and whether or not they found work.



- (a) How many male clients found work?

Answer _____ [1]

- (b) Complete the frequency tree above. [1]

One client in the group is to be selected at random to complete a satisfaction survey.

- (c) What is the probability that this person is male?

Answer _____ [2]

Examiner Only	
Marks	Remark

The client who was selected for the survey had found work.

(d) Is this person more likely to be male or female?

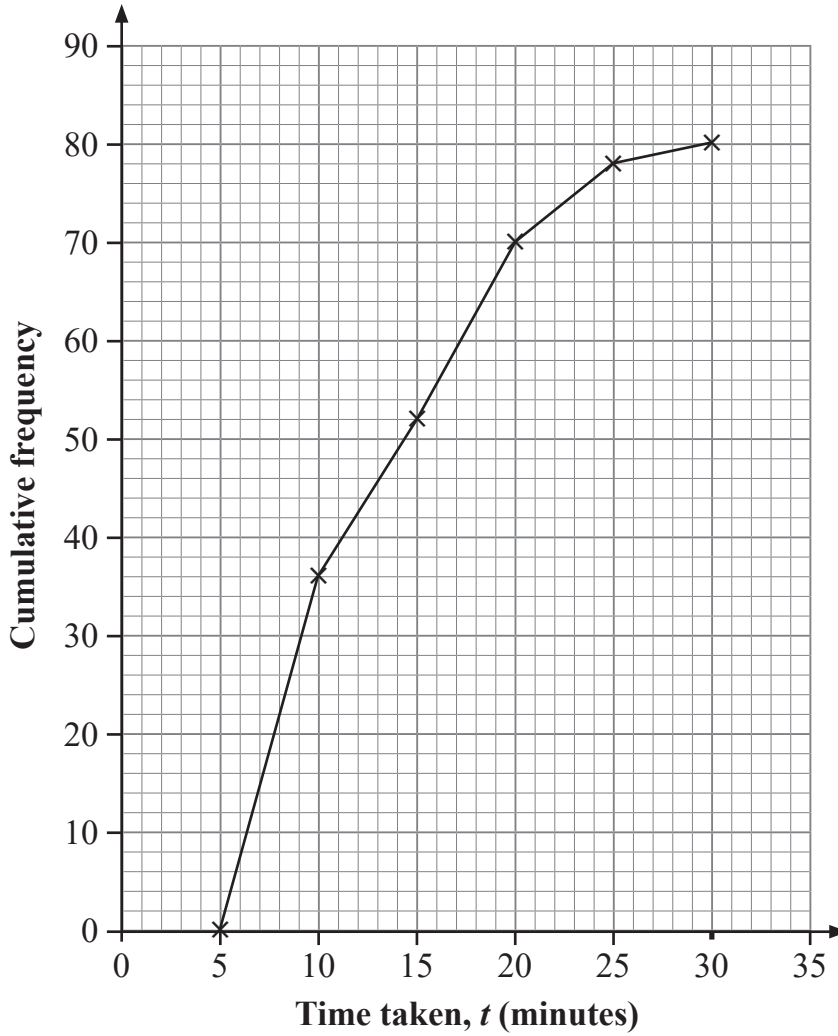
Explain your answer.

[3]

Examiner Only	
Marks	Remark

10 The times taken by a sample of people to complete a puzzle in a competition are summarised in the cumulative frequency diagram below.

Examiner Only	
Marks	Remark



(a) What is the size of the sample?

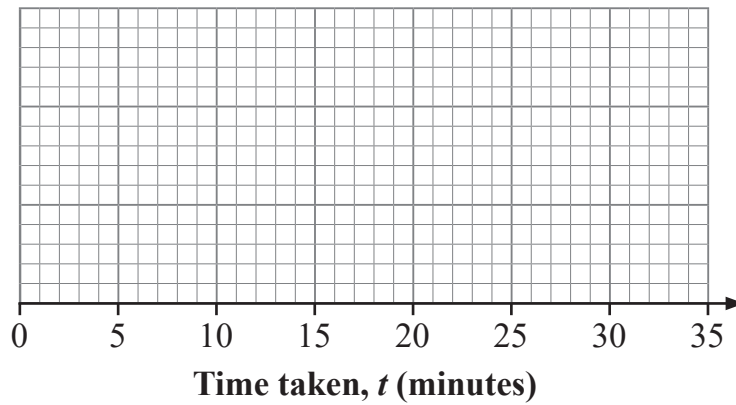
Answer _____ [1]

(b) Write down the modal class.

Answer _____ [1]

The fastest time to complete the puzzle was 6 minutes and the slowest time was 28 minutes.

- (c) On the grid below, draw a box plot to illustrate the information in the cumulative frequency diagram.



[4]

- (d) Describe the skewness shown in the box plot.

_____ [1]

- (e) Could the normal distribution be used as a model for this data?

Tick the correct box:

Yes No

Explain your answer.

 _____ [2]

Competitors who finish the puzzle in 14 minutes or less go through to the next round of the competition.

- (f) Estimate the number of competitors from the sample who will go through to the next round.

Answer _____ [1]

Examiner Only	
Marks	Remark

11 The table below shows the number of monthly notified vacancies between July 2019 and June 2020 in Northern Ireland.

Vacancies notified: July 2019 to June 2020

Month	Notified vacancies			
	Full-time	Part-time	Casual	Total
Jul-19	4415	1404	648	6467
Aug-19	4555	1817	501	6873
Sep-19	4240	1872	609	6721
Oct-19	5756	1922	591	8269
Nov-19	5295	1510	602	7407
Dec-19	2541	632	372	3545
Jan-20	4583	1513	633	6729
Feb-20	3375	1402	546	5323
Mar-20	2927	893	533	4353
Apr-20	1792	329	238	2359
May-20	2108	325	342	2775
Jun-20	2030	443	304	2777
Total	43 617	14 062	5919	63 598

(a) Which month had the fewest notified vacancies in total?

Answer _____ [1]

Tom says that 111 part-time vacancies were filled between January 2020 and February 2020

(b) (i) How did Tom calculate this number?

[1]

(ii) Give a reason why Tom may not be correct.

_____ [2]

Examiner Only	
Marks	Remark

Sources:

Q1 map, Q4 graph, Q6 graph and Q11 table.....© Crown Copyright - 'Northern Ireland Labour Market Report for August 2020,' published by NIRSA
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