

Please check the examination details below before entering your candidate information

Candidate surname					Other names				
Centre Number					Candidate Number				

Pearson Edexcel Level 1/Level 2 GCSE (9–1)

Friday 13 June 2025

Afternoon (Time: 1 hour 30 minutes)

Paper reference **1ST0/2F**

Statistics

PAPER 2

Foundation Tier

You must have:
Ruler graduated in centimetres and millimetres, protractor,
pair of compasses, pen, HB pencil, eraser, scientific calculator.

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.*
- Scientific calculators may be used.
- You must **show all your working out** with **your answer clearly identified** at the **end of your solution**.



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.
- Try to answer every question.
- Check your answers if you have time at the end.

Turn over ►

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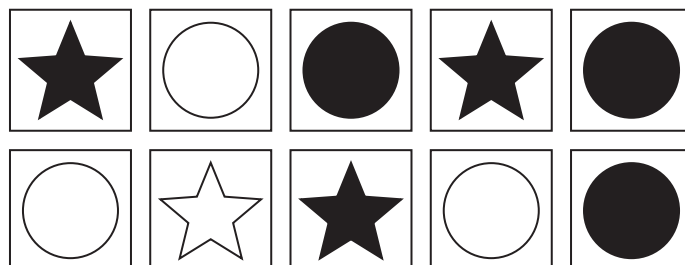

Pearson

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 Below are 10 cards from a game.



(a) Complete this two-way table.

	Black	White	Total
Star	3	1	4
Circle			
Total			

(1)

One of the 10 cards is picked at random.

(b) Write down the probability that the card picked is a star.

(1)

(Total for Question 1 is 2 marks)

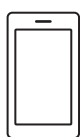


- 2 The table shows information about the percentage of teenagers who used different types of devices in 2015 and in 2022

Device	Smartphone		Desktop/Laptop computer		Gaming console	
Year	2015	2022	2015	2022	2015	2022
Percentage (%)	73	95	87	90	81	80

(Source: www.pewresearch.org)

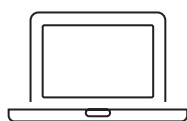
Sapna created a visual representation of these data.



73%



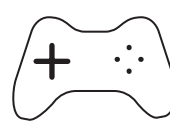
95%



87%



90%



81%



80%

Discuss whether or not Sapna's visual representation was an appropriate way to represent this information.

(Total for Question 2 is 2 marks)

- 3 The table shows information about the number of films that each of 12 students watched during one week.

Number of films	Frequency
1	2
2	6
3	3
4	1

- (a) Work out the mean number of films watched per student.

.....
(2)

The mean number of films watched by twelve pensioners in the same week is 1.5

Alina claims that the students watched more television in this week than the pensioners.

- (b) Explain why Alina's claim may be incorrect.

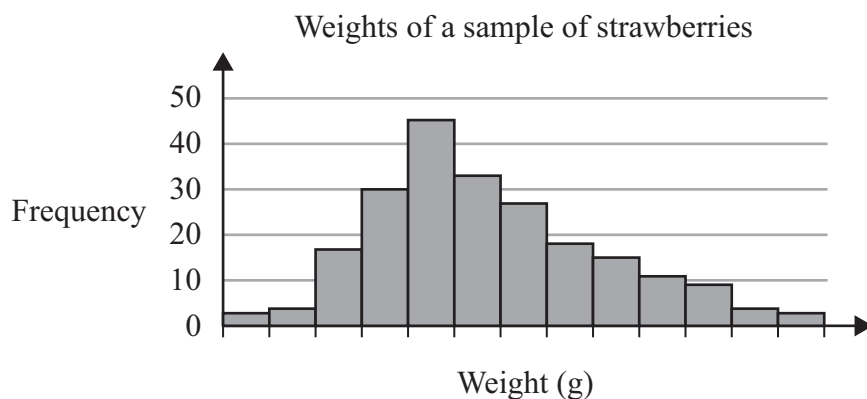
.....
.....
.....
(1)

(Total for Question 3 is 3 marks)



- 4 For each of the three diagrams below, state whether the mode, median or mean would be the most appropriate average to use to summarise the data.

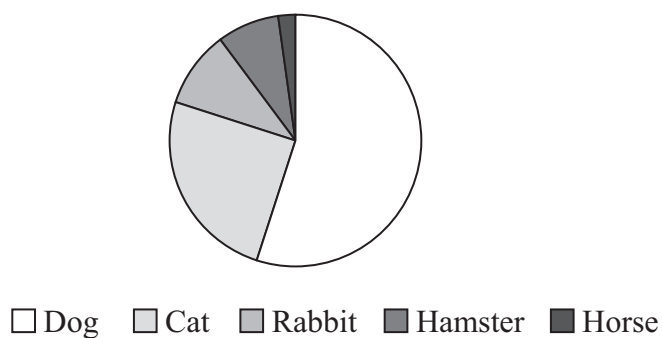
(a)



(1)

(b)

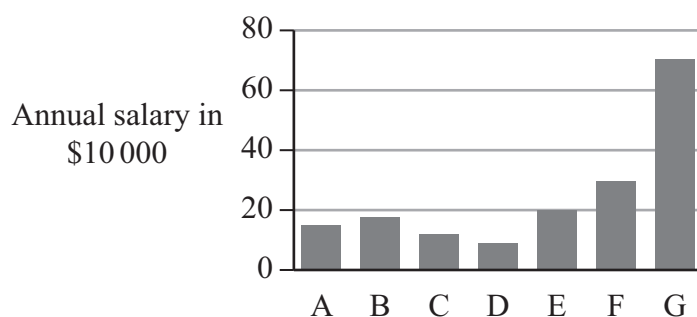
Students' favourite animal



(1)

(c)

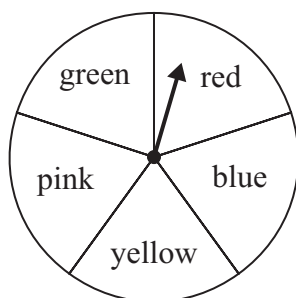
Salaries of seven employees
(A to G) in a company



(1)

(Total for Question 4 is 3 marks)

- 5 Claire has a spinner.



She spins the spinner 10 times and records the colour the spinner lands on.
It lands on red 3 times.

- (a) Using Claire's results, estimate the probability that the next time she spins the spinner it will land on red.

(1)

Dhiyan spins the same spinner 50 times and records the colour the spinner lands on each time.

Here are Dhiyan's results.

Colour	red	blue	yellow	pink	green
Frequency	4	15	7	1	23

- (b) Using Dhiyan's results, estimate the probability that the next time he spins the spinner it will land on red.

(1)

- (c) Whose data will give a more reliable estimate for the probability, Claire's or Dhiyan's?
Give a reason for your answer.

(2)

- (d) Considering Dhiyan's results, is the spinner fair?
Give a reason for your answer.

(2)

(Total for Question 5 is 6 marks)



- 6 Tim recorded the number of sheep on each of eight farms.
The results are shown below.

44 41 72 74 68 80 68 97

- (a) Work out the median.

.....
(2)

Tim recorded the number of sheep on the eight farms incorrectly.
There are 2 more sheep that need to be included on every farm.

- (b) Work out the new median.

.....
(1)

Tim also recorded the number of cows and the number of pigs on each of the eight farms.

The mean number of cows is 48

The mean number of pigs is 70

- (c) Compare the number of cows with the number of pigs for these eight farms.

.....
.....
(1)

Tim plans to compare the two sets of data using the interquartile range.

- (d) Which average would be the most appropriate to use with the interquartile range?

.....
(1)

(Total for Question 6 is 5 marks)

- 7 Leya has collected data about 15 butterflies.

The table gives information about the length of time, in days, each butterfly lived.

Length of time lived (d days)	Frequency
$0 < d \leq 3$	7
$3 < d \leq 6$	4
$6 < d \leq 9$	3
$9 < d \leq 12$	0
$12 < d \leq 15$	0
$15 < d \leq 18$	1

Leya uses the table to calculate an estimate for the mean length of time these butterflies lived.

Her estimate for the mean is 4.5 days.

- (a) Without performing a calculation, explain why Leya's value for the mean is an estimate.

(1)

- (b) Explain why using the mean to represent the average length of time these butterflies lived may not be appropriate.

(1)

(Total for Question 7 is 2 marks)



- 8 Freya wants to work out the life span of the light bulbs produced at her factory.

She selects a random sample of 50 light bulbs, and measures the time taken for each light bulb to fail.

Explain why conducting a random sample was more appropriate than conducting a census.

(Total for Question 8 is 1 mark)



9 Mandeep visited Marple Wood Farm and tallied the types of animals he saw.

- (a) Circle the word in the list below that best describes the type of data for the types of animals.

Quantitative

Discrete

Continuous

Categorical

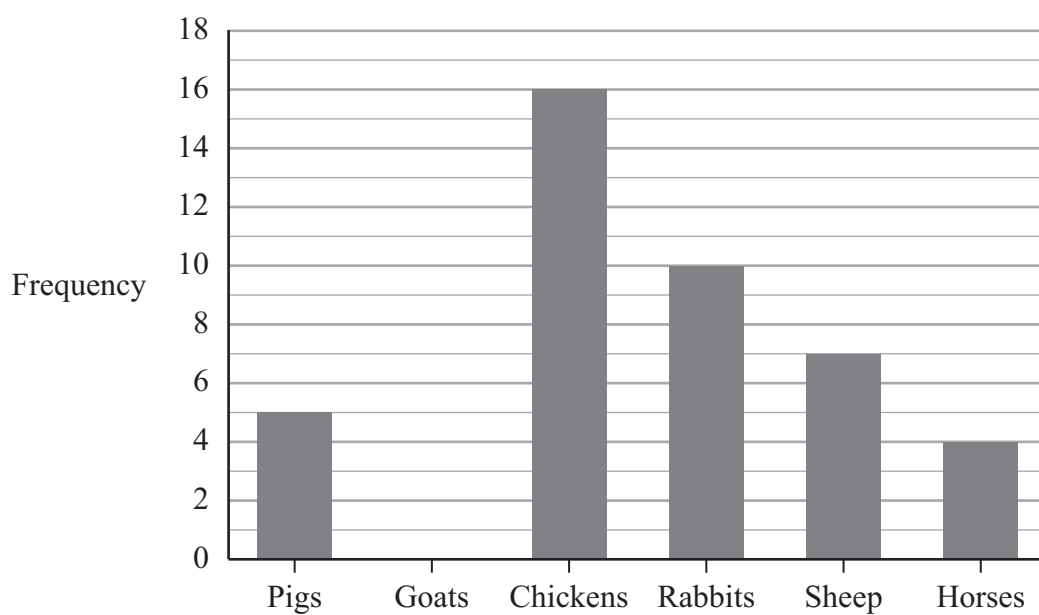
(1)

The incomplete tally chart and incomplete bar chart give some information about Mandeep's results.

- (b) Complete the tally chart and the bar chart.

(2)

Animal	Tally
Pigs	
Goats	
Chickens	
Rabbits	
Sheep	
Horses	



This is a sign at the entrance to the farm.

Marple Wood Farm
Home to
over 600 animals!

Mandeep tallied 55 animals during his visit.
Using his results, Mandeep claims that the most common animal in the farm is a chicken.

(c) Give **two** reasons why Mandeep’s claim may be incorrect.

.....

.....

.....

.....

.....

(2)

(Total for Question 9 is 5 marks)

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10 A teacher wants to investigate how many hours students spent revising for a test.

20 students have to complete a short questionnaire before they begin the test.

This is a copy of the questionnaire.

Question 1 How prepared are you for this test?
Select a score, with 10 meaning you feel very prepared.

1 2 3 4 5 6 7 8 9 10

Question 2 How long did you spend revising for this test?

.....

- (a) State one advantage of using a short questionnaire instead of interviewing each student.

.....
(1)

- (b) State the type of question used as **Question 2**

.....
(1)

The table below shows the data collected for **Question 2**

5 hrs	20 mins	2	2	about an hour I think	0	2.5	Not many	none	Not sure
3	2	1	0	1 day	2 hours	3	5 h	1 hour a day	0

- (c) Give a reason why this data needs to be cleaned.

.....
(1)



The teacher cleans the data.

The teacher wants to display information about the test mark each student got compared to the number of hours this student revised.

The teacher plans to draw a diagram for this information.

The diagram will be shown on a poster where these students can see it.

- (d) From the list below, circle the type of diagram it would be best to use for this target audience.

Box plot

Pie chart

Scatter diagram

Cumulative frequency chart

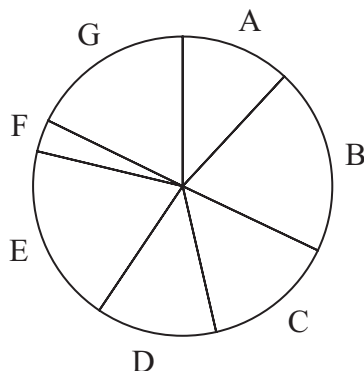
(1)

(Total for Question 10 is 4 marks)

- 11 A store manager wants to show the employees which department is making the most profit.

The store manager presents the data in this pie chart.

Profit share by department



- A Adult clothing
- B Baby
- C Carpet
- D Dining
- E Electronics
- F Furniture
- G Gifts

- (a) Explain why the use of a pie chart may not be appropriate to show which department is making the most profit.

(1)

The raw data is summarised in the table.

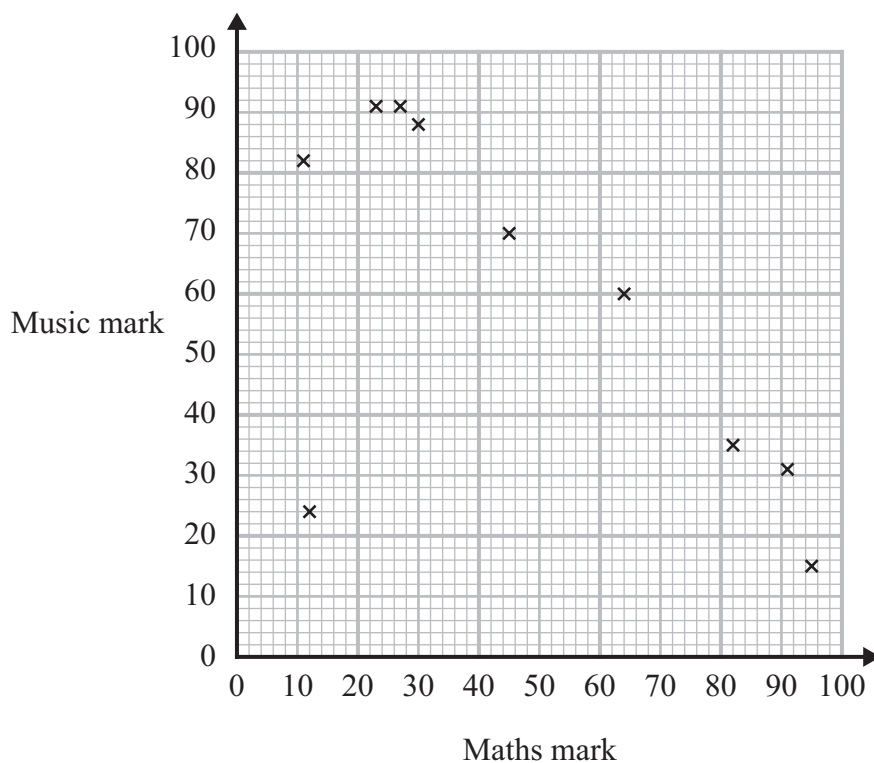
Department	Profit (£1000)
A	10
B	17
C	12
D	11
E	16
F	3
G	15

- (b) Suggest a more appropriate diagram to represent and compare the profits made in the different departments.

(1)

(Total for Question 11 is 2 marks)

- 12 The scatter diagram shows the marks each of ten students got for a Maths test and for a Music test.



One of these points is an outlier.

- (a) On the diagram, draw a circle around the outlier.

(1)

- (b) Excluding the outlier, describe the correlation shown in the diagram.

(1)

The outlier is removed from the data.

The mean of the Maths marks is 52

The mean of the Music marks is 63

- (c) Excluding the outlier, draw a line of best fit that passes through the double mean point on the scatter diagram.

(2)

30 students did both tests. The scatter diagram shows the marks of 10 of these students.

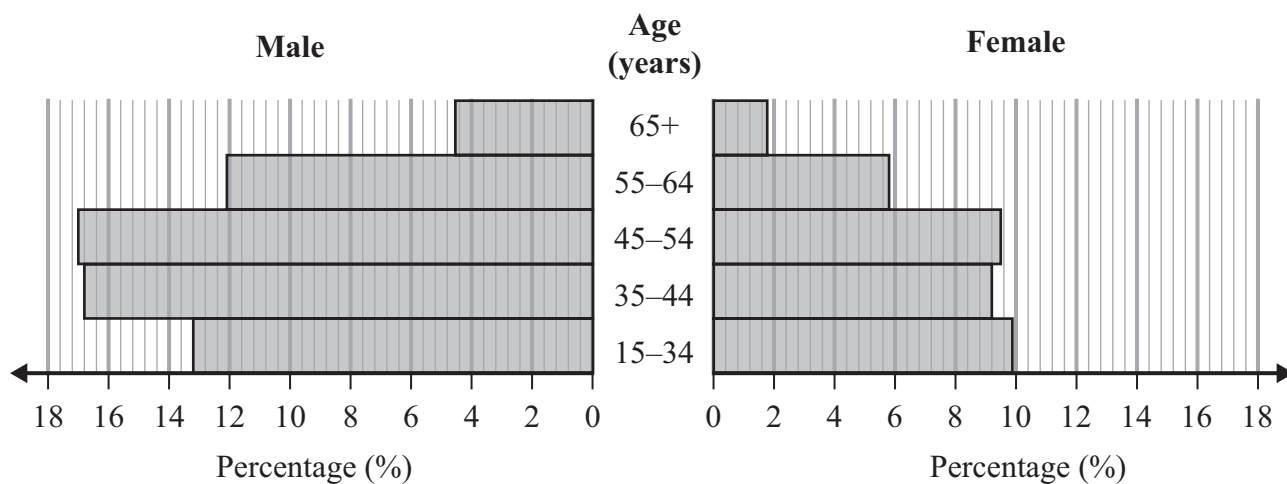
- (d) Suggest one adjustment that could be made to improve the reliability of any conclusions made using the scatter diagram.

(1)

(Total for Question 12 is 5 marks)

13 The diagram shows information about managers in Australia from 2016 to 2017

Managers in Australia 2016–17



(Source: www.data.gov.au)

(a) State the name of this type of diagram.

(1)

(b) Find the age group that the greatest proportion of managers are from.
You should justify your answer.

(2)

(Total for Question 13 is 3 marks)

- 14 A professor of sports science wanted to test if listening to music improved running performance.

She tested a sample of 20 adult males.

All the males were similar in age and in fitness level.

The professor completed the study as a laboratory experiment.

She asked all the males to run as far as they could in six minutes.

Each male ran twice.

The first time he ran he listened to music.

The second time he ran he did not listen to music.

- (a) Give **two** advantages of the professor completing this study as a laboratory experiment.

(2)

The professor believes the explanatory variable in this experiment is if the runners are listening to music or not.

- (b) State the response variable in this experiment.

(1)

One extraneous variable in this experiment is the type of music that the runners listen to.

- (c) How could the professor control this extraneous variable?

(1)

- (d) Explain why it is important to control extraneous variables in experiments.

(1)

(Total for Question 14 is 5 marks)



15 Henry is investigating the price of some ingredients needed to make a cake.

The table shows the price index of twelve eggs and 1 kilogram of sugar in the UK in the years 2010, 2015 and 2020

The base year price is 2010 for both ingredients.

Year	Eggs	Sugar
2010	100	100
2015	87	78
2020	71	77

(Source: © Office for National Statistics)

(a) Calculate the percentage change in the price of twelve eggs between 2010 and 2020

.....
(2)

In 2010, the price of 1 kilogram of sugar in the UK was 95 p.

(b) Calculate the price of 1 kilogram of sugar in 2020
Give your answer correct to the nearest penny.

..... p
(2)



In 2020, the total cost of all the ingredients was 450p.

Henry predicts that he will not have to pay more than 450p for the same ingredients today.

- (c) Comment on the appropriateness of Henry's prediction.
Give a reason for your answer.

(2)

(Total for Question 15 is 6 marks)

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- 16** Elise wants to investigate the relationship between the size of mammals and the size of the fruits and seeds that these mammals eat. This is her plan.

Hypothesis

- Can body mass and skull shape predict the type of seed and fruit eaten by different mammal species?

Data collection

- Skull measurements will be collected from museums for two adult males and two adult females for each mammal species.
- The data will be collected for 100 mammals. Any missing data will be sourced from the internet.
- The size of the seeds and fruits that the 100 mammals eat will be recorded using information collected from existing databases.

Discuss the appropriateness of Elise's hypothesis and her data collection strategy.



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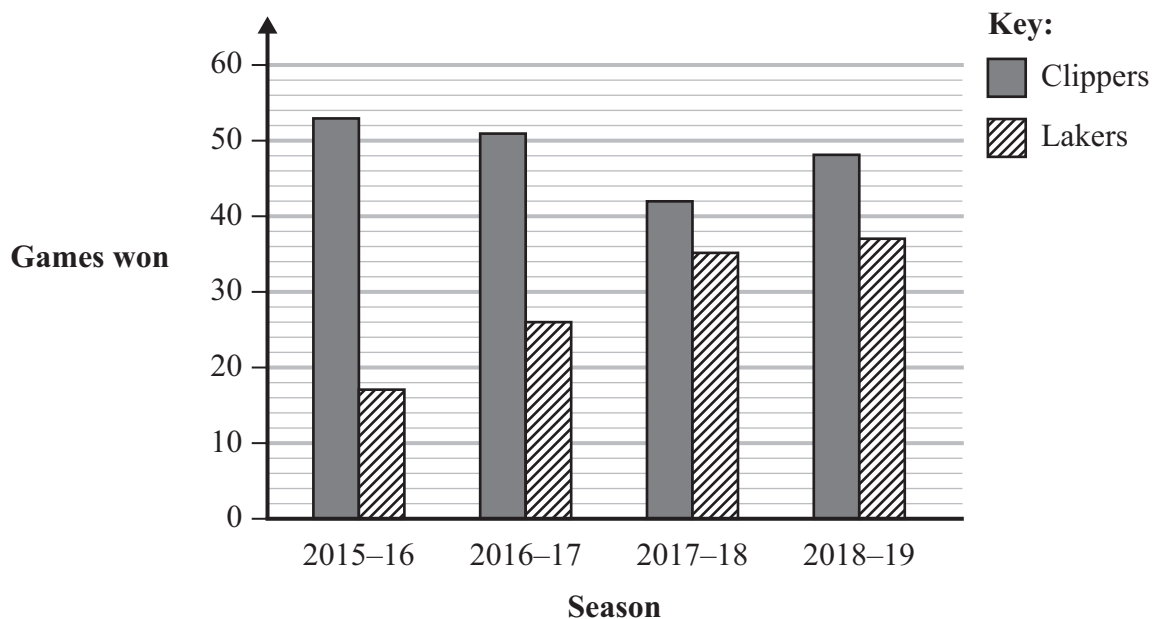
- 17 Divyesh is investigating the number of games won by two Los Angeles basketball teams, the Clippers and the Lakers. He collects some data from the NBA website.

(a) Complete the sentence with an appropriate statistical word.

Divyesh has collected data from the internet and so this is data.

(1)

The information in the bar chart is used to compare the numbers of games won by the Clippers and the Lakers in four basketball seasons from 2015 to 2019



(Source: www.nba.com)

Using the information in the bar chart to compare the number of games won by each team over the four years,

(b) write down one comparison between the two teams,

(1)

(c) describe the trend in the number of games won by the Lakers over the four seasons.

(1)



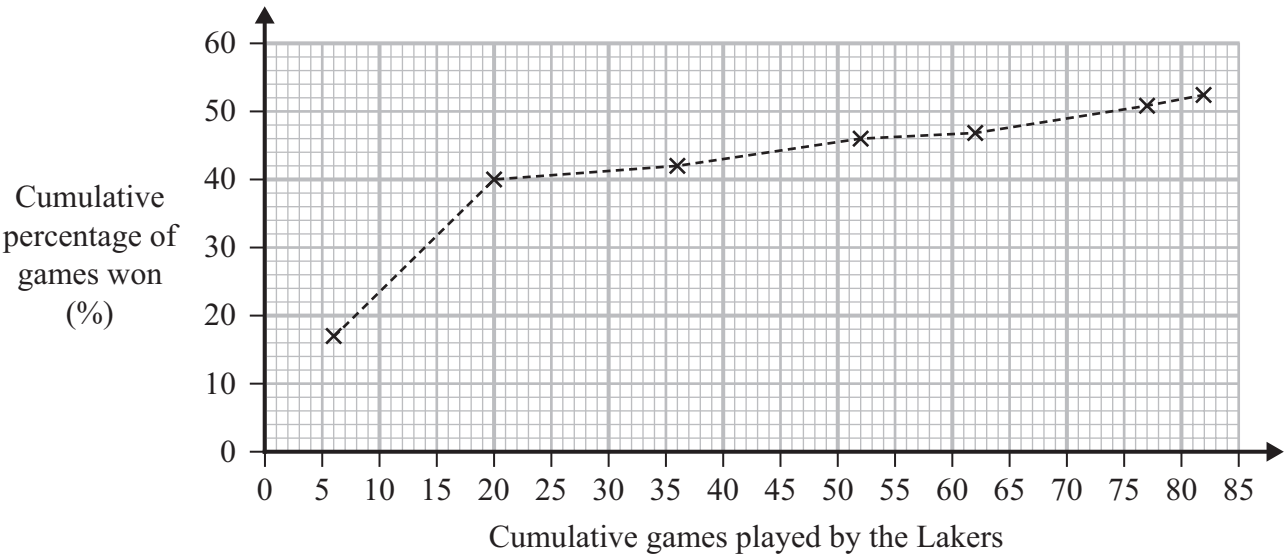
The table contains information about the number of games won by the Clippers in the 2022–23 season.

	Oct 22	Nov 22	Dec 22	Jan 23	Feb 23	Mar 23	April 23
Cumulative games played	7	23	38	54	64	78	82
Cumulative games won	3	13	21	29	33	41	44
Cumulative percentage of games won (%)	43		55	54	52		54

- (d) Complete the table.
Give your answers correct to the nearest whole number.

(2)

The line graph shows the cumulative games played and the cumulative percentage of games won by the Lakers in the same season.



Each team played 82 games in the 2022–23 season.

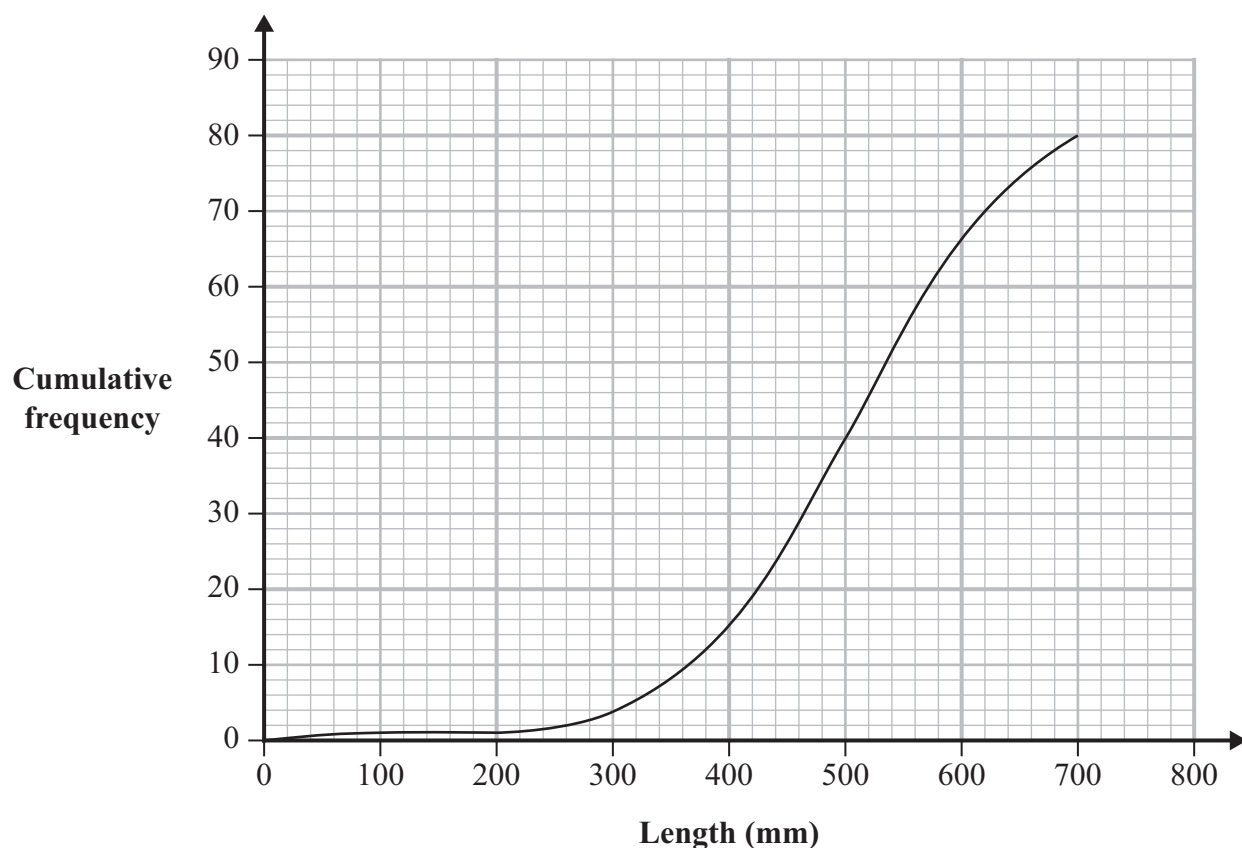
- (e) Which team won the most games by the end of the 2022–23 season?
You should justify your answer.

(1)

(Total for Question 17 is 6 marks)



- 18 The cumulative frequency diagram gives information about the lengths, in mm, of a sample of 80 pike, caught in the Yukon River in Alaska.
The pike were put back into the river.



(Source: www.dataone.org)

- (a) Estimate how many of these pike had a length of 440 mm or more.

(2)

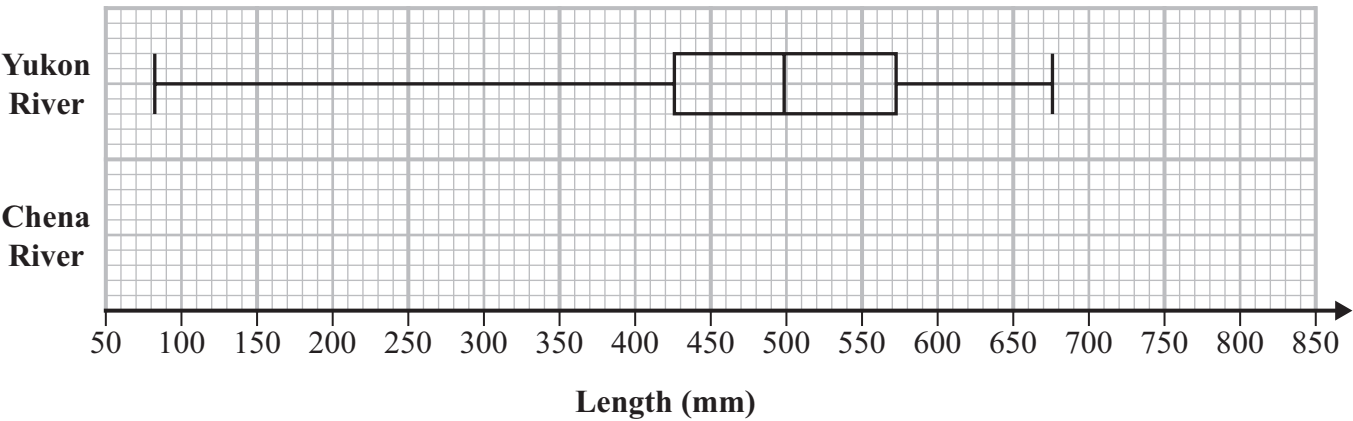
These data were collected using opportunity sampling.

- (b) State an advantage of using opportunity sampling.

(1)



The box plot below shows information about the lengths of the pike sampled from the Yukon River.



Here are the summary statistics, in mm, for a sample of pike caught in the Chena River in Alaska.

Median	Minimum	Maximum	Q1	Q3
476	210	825	390	556

(c) On the grid above, draw a box plot for the lengths of the pike caught in the Chena River.

(2)

(d) Give **three** comparisons between the distribution of the lengths of pike from the Yukon River and the distribution of the lengths of pike from the Chena River. Interpret **one** of these comparisons in context.

(4)

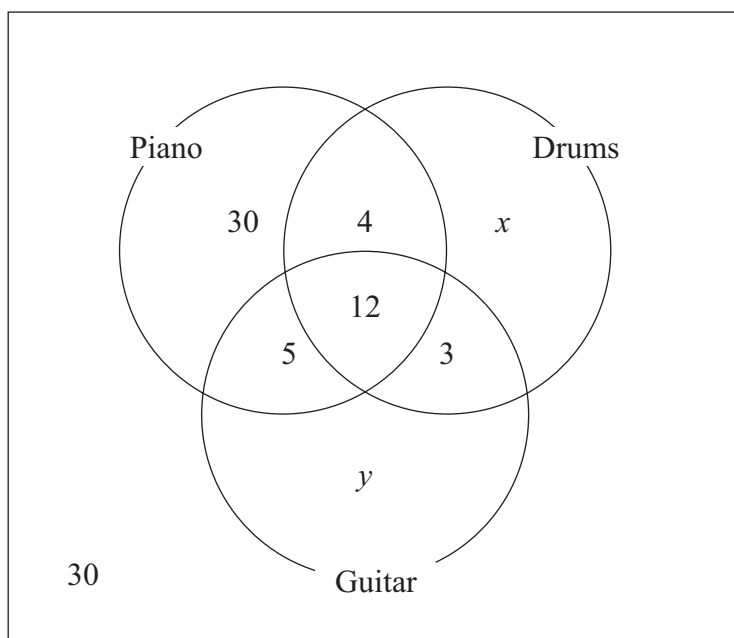
(Total for Question 18 is 9 marks)



- 19 120 musicians were each asked if they play any of the instruments piano, guitar or drums.

40 musicians play the drums.

The Venn diagram gives information about the numbers of these musicians who play these instruments.



A musician is chosen at random.

- (a) Calculate the probability that the musician plays all three instruments.

(1)

- (b) Work out the value of x and the value of y

$x =$

$y =$

(3)



A musician is chosen at random.

(c) Calculate $P(\text{plays the guitar} \mid \text{plays the piano})$

.....
(2)

(Total for Question 19 is 6 marks)

TOTAL FOR PAPER IS 80 MARKS



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