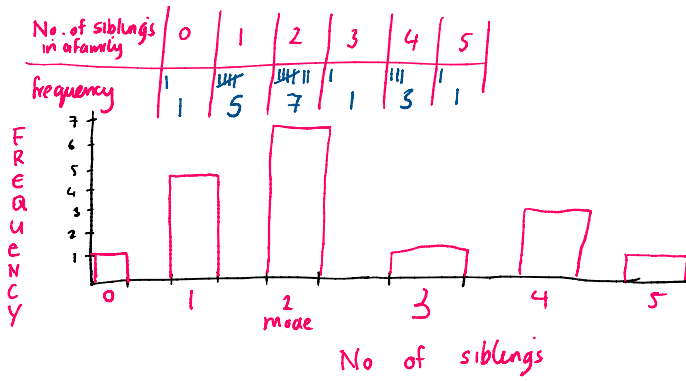


Used for discrete data or categorical data
The heights of the bars represent the frequencies
The bars have spaces between them.



C/W Pg 355 → 357 Q1 → 6.



PROJECT MATHS
Text & Tests
Leaving 3 Certificate

Representing Data Chapter **13**

Section 13.1 Bar charts and Pie charts

Example 1

The frequency table shows the numbers of text messages received by a group of students on a particular Sunday.

No. of messages	0	1	2	3	4	5	6	7	8	9
Frequency	0	1	2	4	6	9	11	14	9	4

Illustrate the information by a bar chart.



Example 2

In a survey on holidays, 120 people were asked to state which type of transport they used on their last holiday. This table shows the results of the survey. Draw a pie chart to illustrate the data.

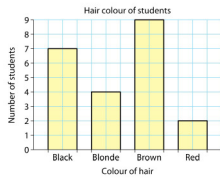
Type of transport	Train	Coach	Car	Ship	Plane
Frequency	24	12	59	11	14

354

Exercise 13.1

1. The hair colours of all the students in a class are recorded. The bar chart on the right shows the results.

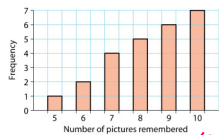
- How many students have black hair?
- Which hair colour is the mode?
- How many students are there in the class?



355

Exercise 13.1

2. This bar chart shows the number of pictures remembered by each student in a memory experiment.



- How many students took part in the experiment? $25 (n)$
- What is the modal number of pictures remembered? 10
- How many students remembered less than 7 pictures? 3
- What is the range of the number of pictures remembered? $10 - 5 = 5$
- What is the median number of pictures remembered?

$$\frac{n+1}{2} = \frac{25+1}{2} = \frac{26}{2} = 13^{\text{th}} \text{ value.}$$

$9 \rightarrow \text{Median}$

356

Exercise 13.1

3. Paul's class got these marks for a project.

19 16 45 43 40 39 36 30 28 42 35 40
32 38 41 48 27 18 29 38 42 26 41 35

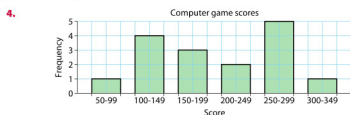
(i) Use a copy of this table. Fill it in.

Mark	11–20	21–30	31–40	41–50
Tally				
Frequency	3	5		

(ii) Draw a bar chart for this data.

356

Exercise 13.1

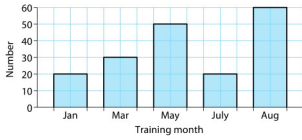


- This graph shows scores in a computer game.
- Scores of 250 or more won a prize. How many people won a prize?
 - How many people played altogether?
 - A paper said that "Five people scored between 270 and 299 points." Is this correct? Choose one of these answers.
(a) Yes (b) No (c) Can't tell

356

Exercise 13.1

5. This bar chart shows the numbers who attended five first-aid training sessions and the months during which these sessions took place.

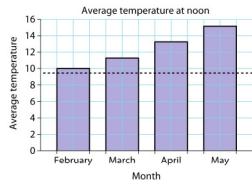


- (i) Find the total number who attended the five sessions.
- (ii) Which two months accounted for half the total that attended?
- (iii) What was the mean number of people who attended each session?

337

Exercise 13.1

6. This bar chart shows the average monthly temperature at noon for each of four months. Brenda says 'the dotted line shows the mean for the four months'. Use the bar chart to explain why Brenda cannot be correct.

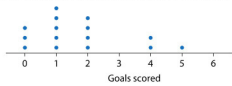


337

Exercise 13.1

Line Plot

7. The line plot below illustrates the number of goals scored per match by a hockey team.

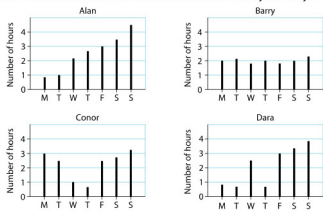


- (i) How many matches have the team played?
- (ii) Which number of goals scored is the mode?
- (iii) What is the range of the number of goals scored?
- (iv) What percentage of their matches were scoreless?

337

Exercise 13.1

8. These bar charts show the number of hours of TV watched by four boys in one week.

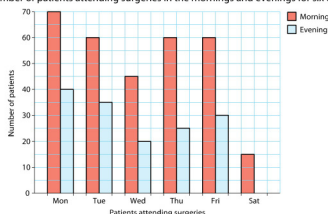


- Whose graph matches these comments?
- (i) I watched most TV at the beginning and end of the week.
 - (ii) I watched about the same amount of TV each day.
 - (iii) I watched quite a lot of TV on four days and not much on the other three days.
 - (iv) Each day I watched more TV than the day before.

338

Exercise 13.1

9. The bar chart below is called a dual bar chart. It compares two sets of data. It gives the number of patients attending surgeries in the mornings and evenings for six days.



- (i) On which day did most patients attend?
- (ii) On which day did fewest patients attend?
- (iii) On which day was there no evening surgery?
- (iv) On which day did 90 patients attend?
- (v) How many more patients attended on Tuesday morning than on Tuesday evening?

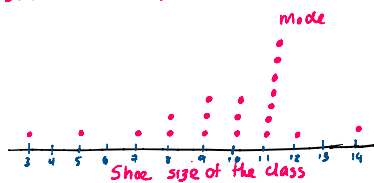
338

Exercise 13.1

10. The sizes of dresses sold in a shop during one week are given in the table below:

Line Plot

Each dot or x represents a person or a data value
Dots are the frequencies



Pie Chart

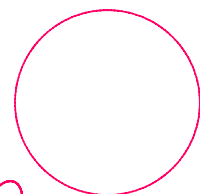
① When given the values and you need to find the degrees.

Method

① Put the value over the total amount
Multiply by 360° to find the degrees of each sector

How we travel to school 19 students

Car	Bike	Walk	Bus
6	4	7	2
$\frac{6}{19} \times 360^\circ$	$\frac{4}{19} \times 360^\circ$	$\frac{7}{19} \times 360^\circ$	$\frac{2}{19} \times 360^\circ$
114°	76°	133°	38°

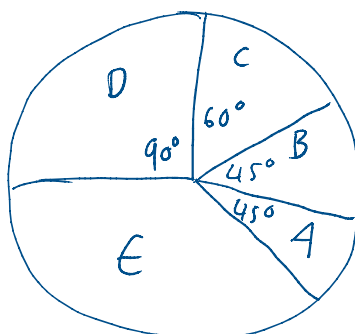


② When given the degrees and to need the frequency

Method

① Put the degrees over 360 and multiply by the total amount.

264 students



Exercise 13.1

10. The sizes of dresses sold in a shop during one week are given in the table below:

Size	8	10	12	14	16	18
Frequency	3	7	10	12	6	2

Draw a pie chart to illustrate this data.

358

264 students

by the total amount.

$$A = \frac{45}{360} \times 264 = 33$$

$$B = \frac{45}{360} \times 264 = 33$$

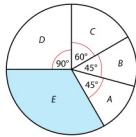
$$C = \frac{60}{360} \times 264 = 44$$

$$D = \frac{90}{360} \times 264 = 66$$

$$E = ?$$

Exercise 13.1

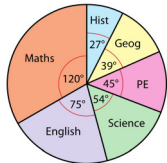
11. The pie chart on the right illustrates the grades achieved by a group of 264 students. Find the number of students that achieved grade E.



359

Exercise 13.1

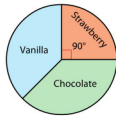
12. The given pie chart illustrates the favourite lessons of 120 Junior Cert students in a Cork school. How many pupils named each of these as their favourite lessons?
 (i) maths (ii) PE
 What percentage of pupils chose science as their favourite lesson?



359

Exercise 13.1

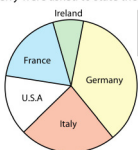
13. An ice cream stall sells vanilla, strawberry and chocolate ice creams. The pie chart illustrates the sales of ice cream for last Saturday. The number of vanilla and the number of chocolate ice creams sold were the same. The stall sold 60 strawberry ice creams. How many chocolate ice creams were sold?



359

Exercise 13.1

14. In a survey, 320 people on an aircraft and 800 people on a ferry were asked to state their nationality.



Aircraft
320
people



Ferry
800
people

Jane looked at the charts and said 'There were about the same number of people from Italy on the aircraft and on the ferry'. Explain why Jane is wrong.

359

Answers 13.1

1. (i) 7 (ii) Brown (iii) 22
2. (i) 25 (ii) 10 (iii) 3
(iv) 5 (v) 9
4. (i) 6 (ii) 16 (iii) Can't tell
5. (i) 180 (ii) March and August
(iii) 36
6. Mean = 12.5; line too low
7. (i) 15 (ii) 1 (iii) 5 (iv) 20%
8. (i) Conor (ii) Barry (iii) Dara (iv) Alan
9. (i) Monday (ii) Saturday (iii) Saturday
(iv) Friday (v) 25
11. 88
12. (i) 40 (ii) 15; 15%
13. 90