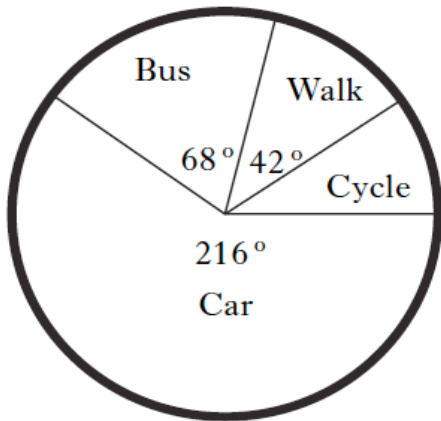


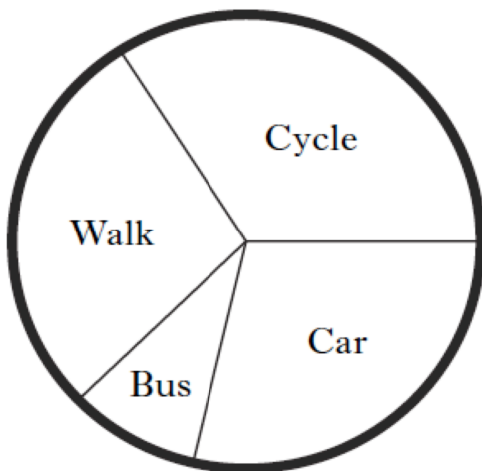
N5 Numeracy Revision

1 The pie chart shows how the pupils at Newdale Academy travelled to school each day



- a) There are 900 pupils at Newdale Academy. How many pupils cycled to school?

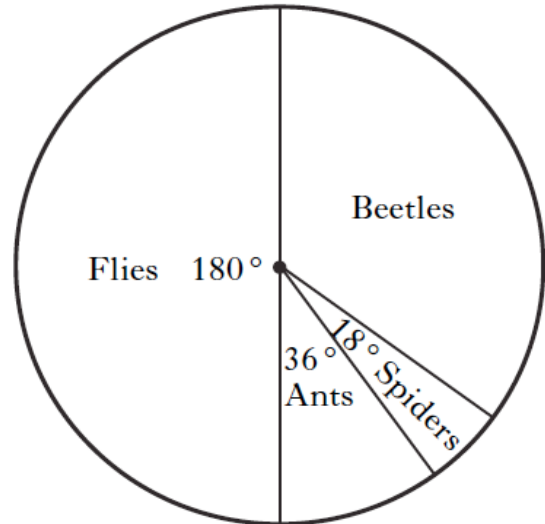
The school ran a health promotion campaign to improve the fitness of its pupils. The pie chart below shows how the pupils travelled to school after the campaign had been running for six months



- b) Describe the differences in how the pupils travelled to school before and after the campaign.

2 Some biology students were doing a project on “creepy crawlies”. The pie chart shows the different types of creepy crawlies that the students collected from a garden.

CREEPY CRAWLIES



The students collected 220 creepy crawlies altogether. How many were beetles?

3 A machine weighs out coffee and puts it into packets. The machine is checked at 11 a.m. and again at 4 p.m. to see if its output is satisfactory. The results of the inspection on 15/9/13 are shown below in a back-to-back stem-and-leaf chart. The weights are in grams.

11 a.m.		4 p.m.
2 0 3 7	39	6 4
1 3 5 0 3 4	40	7 0 6 5 4
0 1 7 2 2 6	41	5 2 7 2
2 0 0 2	42	9 8
	43	0 1 4 1

41|7 represents 417g

A sample of 20 packets was weighed both times.

- a) At which time (11 a.m. or 4 p.m.) did the machine produce:
- (i) 411 grams (ii) 434 grams?
- b) Of the 20 packets sampled at 11 a.m., how many weighed from 391 to 406 grams?

- 4 The table below shows the basic annual premiums charged for car insurance by an insurance company. The basic premium depends on the area where the driver lives and the group their car belongs to.

BASIC ANNUAL PREMIUM					
AREA	CAR GROUP				
	1	2	3	4	5
A	£428	£517	£613	£725	£838
B	£497	£555	£659	£779	£898
C	£525	£598	£712	£841	£975
D	£540	£651	£775	£915	£1055

- a) Lynn's car is in group 4 and she lives in area C. Write down her basic annual premium.

Drivers who do not make a claim on their insurance receive a discount on their basic annual premium as shown in the table below.

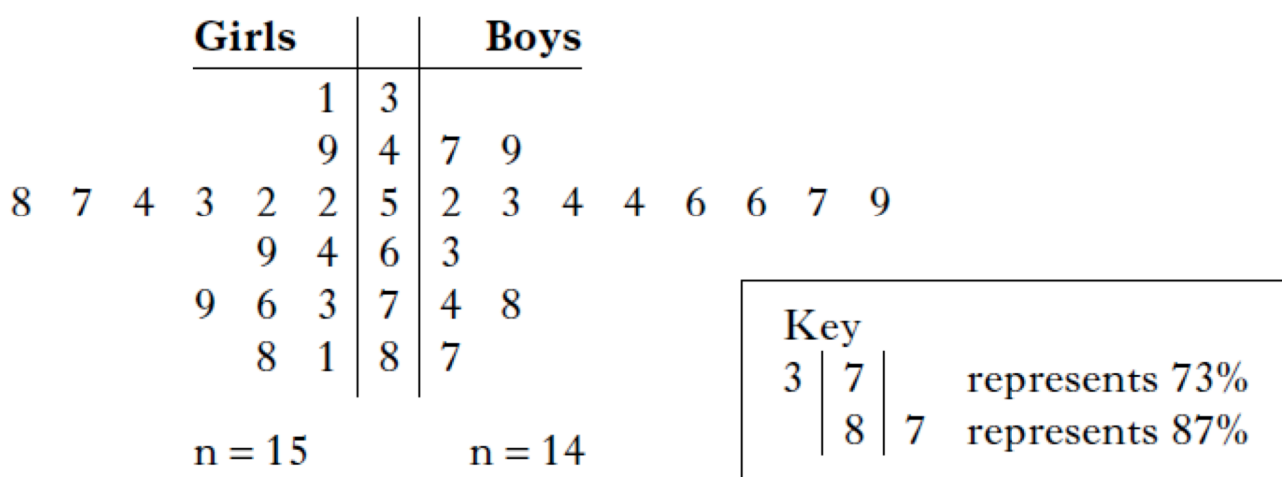
Number of years without a claim	1	2	3	4 or more
Discount	30%	40%	55%	67%

- b) Lynn has not made a claim for 4 years. How much will it cost her to insure her car?

- 5 The table below shows the monthly repayments to be made when money is borrowed from the Bank of Caledonia. Repayments can be made with or without loan protection. Jeremy borrows £8000 over 36 months without loan protection. After 28 months, he is made redundant and is unable to pay the remainder of the loan. His brother, Peter, agrees to make the remaining payments. How much does Peter pay in total?

Monthly repayments: Bank of Caledonia						
Loan Amount	24 months		36 months		48 months	
	With Loan Protection	Without Loan Protection	With Loan Protection	Without Loan Protection	With Loan Protection	Without Loan Protection
£10 000	£495	£445	£343	£305	£277	£237
£8000	£395	£356	£275	£244	£222	£190
£5000	£247	£223	£172	£153	£139	£119
£4000	£198	£179	£138	£123	£111	£95

- 6 This back-to-back stem and leaf diagram shows the results for a class in a recent mathematics examination.



- a) What was the best girl's score in the test ?
- b) What was the worst boy's score in the test ?
- c) What is the mean boy's score ?
- d) Jake says that the boys did better in the test than the girls. Is he right? Justify your answer.

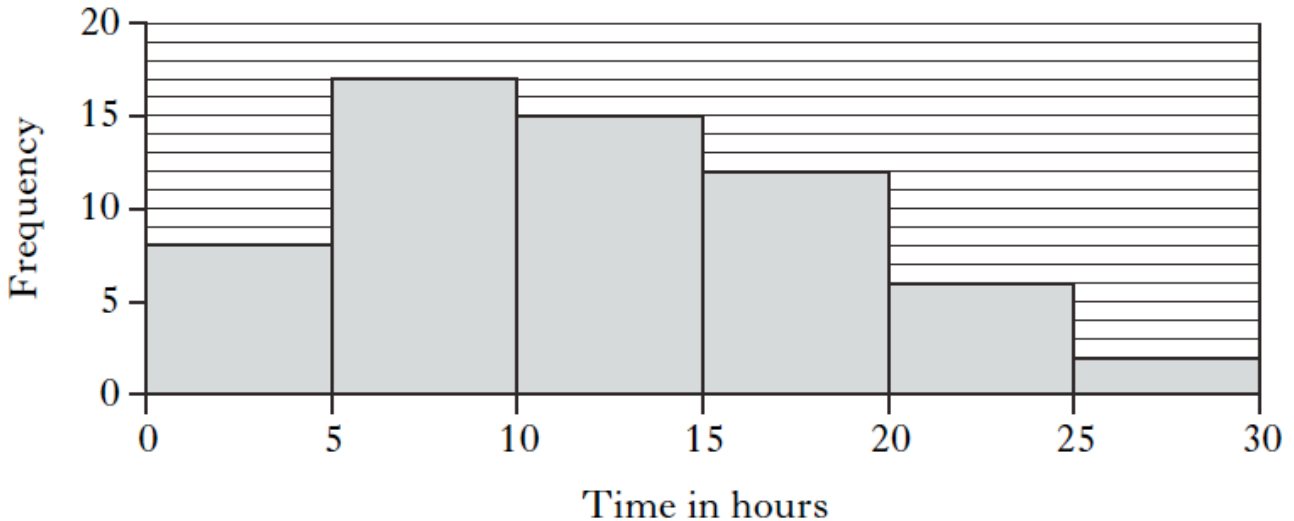
- 7 The table below shows the monthly repayments to be made, with and without payment protection, when money is borrowed from the Good Deal Loan Company.

loan amount	60 months		48 months		36 months		24 months	
	W	WO	W	WO	W	WO	W	WO
£15 000	342.63	288.49	409.43	350.79	510.76	454.86	736.73	663.35
£12 500	285.53	240.41	341.20	292.33	425.63	379.05	613.94	552.79
£10 000	228.42	192.33	272.95	233.86	340.50	303.24	491.15	442.23
£7500	171.31	144.24	204.72	175.40	255.38	227.43	368.37	331.68
£5000	114.21	96.16	136.48	116.93	170.25	151.62	245.58	221.12
W = with payment protection WO = without payment protection								

- a) Joseph decides to borrow £12 500. If he repays it over 48 months, without payment protection, calculate the cost of the loan.
- b) Brian thinks it would be cheaper to take a loan of £12 500 over 36 months with payment protection. Is he correct? Explain your answer.

8

A group of students was asked how many hours they spend studying each week. The histogram below shows the results of the survey.



The same group of students was asked how many hours of television they watch each week. The results of the survey are shown in the table below

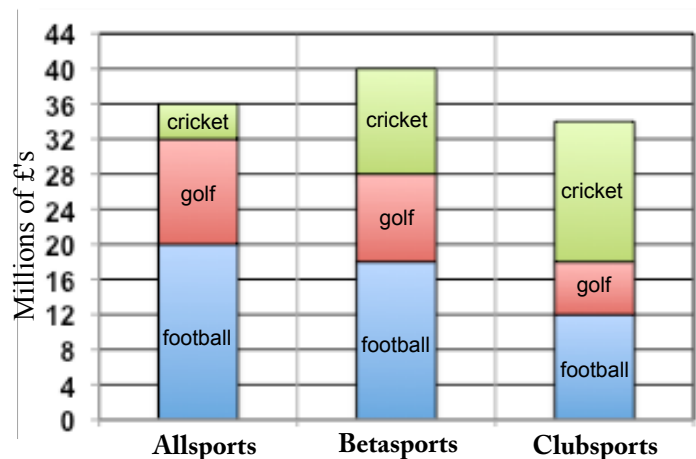
Time (h hours)	Frequency
$0 \leq h < 5$	1
$5 \leq h < 10$	4
$10 \leq h < 15$	9
$15 \leq h < 20$	20
$20 \leq h < 25$	14
$25 \leq h < 30$	12

- Using squared paper, draw a histogram to illustrate the results of this survey.
- Compare the two histograms and comment.

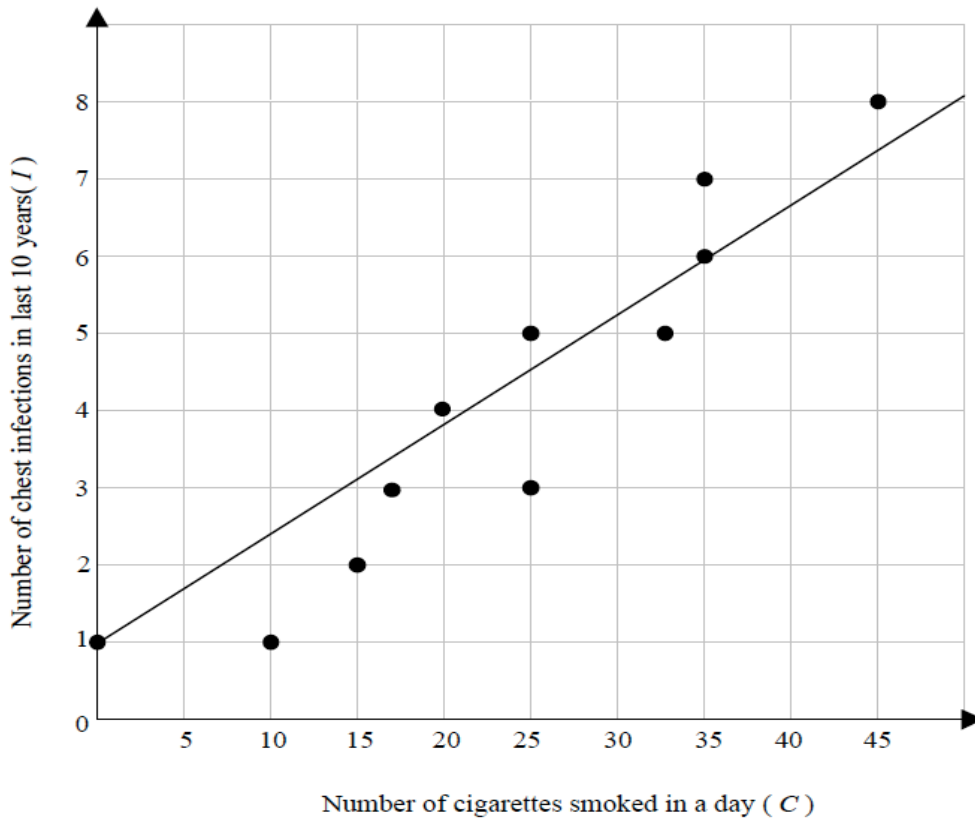
9

The diagram refers to the sales of three large sports shops in Scotland. Their major sales are in football gear, golf clubs and cricket equipment.

- How much were the golf sales in Allsports?
- What is the total sales for football gear in the three shops?
- What is the difference between the amount of golf sales in Allsports compared with Clubsports?
- What is the total sales of cricket gear in Betasports and Clubsports?

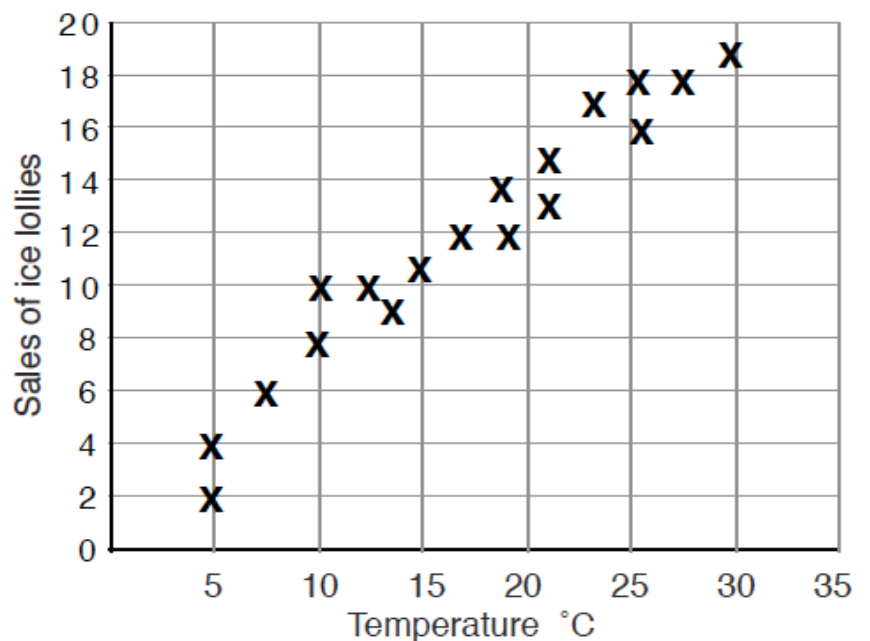


- 10 A group of smokers were asked how many cigarettes they smoked in a day and how many chest infections they had suffered in the last ten years. The results are shown in the scattergraph with the line of best fit drawn.



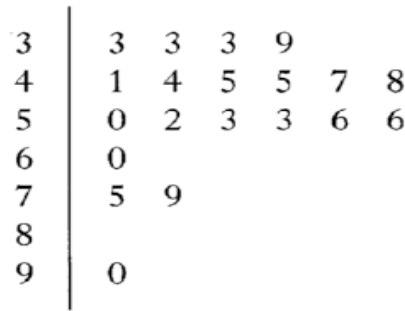
- a) Estimate the number of chest infections suffered in the last 10 years by a person who smokes 22 cigarette in a day.
- b) Comment on the correlation between the 2 sets of data.

- 11 This graph shows a relationship between the temperature during the day and the sales of ice Lollies on that day.



- a) Suggest a connection between the temperature and the sales of ice lollies.
- b) Use the chart to estimate the number of ice lollies which might be sold when the temperature reaches 35 degrees.
- c) Estimate what the temperature was when thirteen ice lollies were sold?

- 12 The stem and leaf diagram shows the number of points gained by the football teams in the Premier League in a season.



$n = 20$

4 | 1 represents 41 points

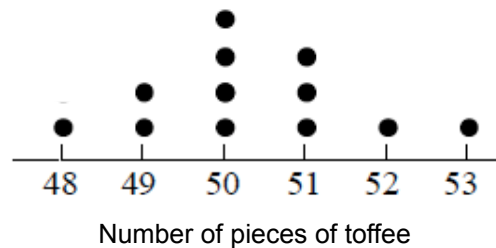
- a) Arsenal finished 1st in the Premiership with 90 points.
In what position did Southampton finish if they gained 47 points?
- b) What is the probability that a team chosen at random scored less than 44 points?

- 13 The table shows the results of a survey of First Year pupils.

	Wearing a polo shirt	Not wearing a polo shirt
Boys	36	18
Girls	44	10

- a) What is the probability that a pupil, chosen at random from this sample, will be a girl wearing a polo shirt?
- b) What is the probability that a pupil, chosen at random from this sample, will not be wearing a polo shirt?
- 14 In a bowl of fruit there are 4 pears, 3 apples, 7 bananas and some oranges. Charlie is asked to choose a piece of fruit at random. If the probability that he chooses a pear is 0.2, how many oranges are in the bowl?
- 15 The number of pieces of toffee in each box of a sample of 12 boxes was counted. Here are the results shown in the dot plot.

- a) Calculate the mean.
- b) What is the probability that a box chosen at random will have more the 50 pieces of toffee in it?



Answers

(1a) 85 (1b) Increase in healthier options of cycling and walking. Decrease in less healthy options car and bus. (2) 77
 (3a) 11 a.m. (3a) 19 (4a) £841 (4b) £277.50 (5) 1952 (6a) 88% (6b) 47% (6c) 60% (6d) No Girl's mean = 62% > boy's mean 60%
 (7a) £1531.84 (7b) No costs £2822.68 < £1531.84 (8) on average students spend more time watching TV than studying
 (9a) £12 million (9b) £50 million (9c) £6 million (9d) 28 million (10a) 4 (10b) positive correlation (11a) positive correlation (11b) 23
 (11c) 18 (12a) 12 (12b) 5/20 = 1/4 (13a) 44/108 = 11/27 (13b) 28/108 = 7/27 (14) 6 (15a) 604/12 = 50.33 (15b) 5/12