T&T2h 13.1
Line plots...

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Statistics 3 – Presenting Data

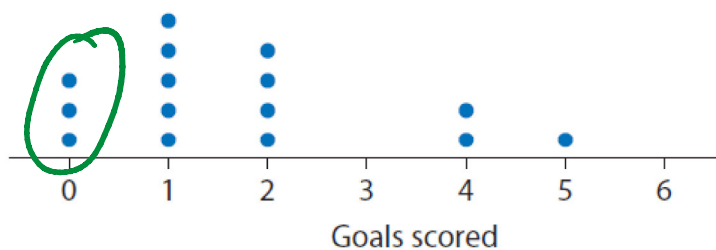chapter **13**

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Exercise 13.1

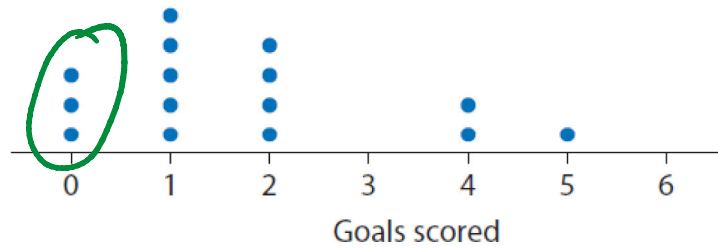**1.** The line plot below illustrates the number of goals scored per match by a hockey team.

Goals scored

(i) How many matches have the team played?

(ii) Which number of goals scored is the mode?

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

Goals scored

  (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? $\dfrac{3}{15} \times 100 = 20\%$

2. The daily maximum temperatures (in °C) at the Eiffel Tower during April are shown in this line plot:
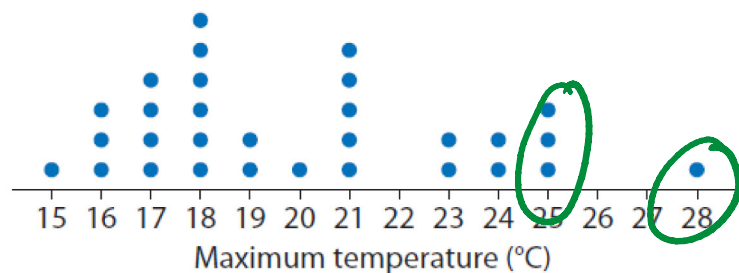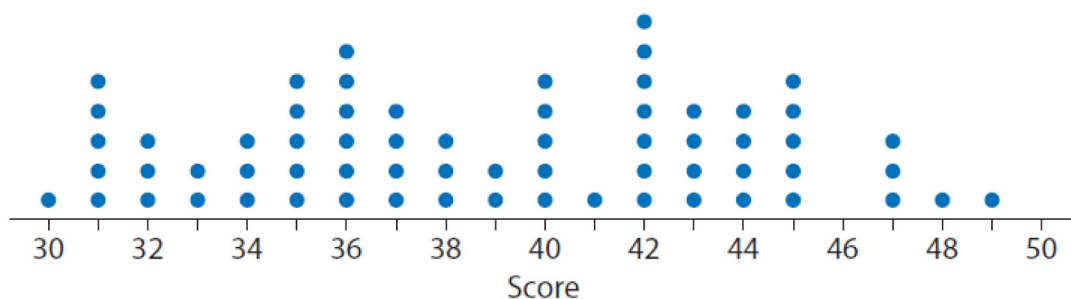
  (i) What is the mode?

  (ii) What is the outlier?

  (iii) On how many days was the maximum temperature 25°C?

  (iv) On what percentage of days did the maximum temperature drop below 20°C?

  (v) If a day is selected at random, what is the probability that the maximum temperature is less than 18°C?

Maximum temperature (°C)

iv) $\dfrac{16}{30} \times 100 = 53.3\%$

v) $\dfrac{8}{30} = \dfrac{4}{15}$

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3. This line plot shows the scores (out of 50) of a group of students in a maths exam:


Score

  (i) Which score was the most common?

  (ii) How many students scored 34?

  (iii) How many students scored 45 or more?

  (iv) What percentage of students scored 35 or less?

 (v) If a student was selected at random, what is the probability that he scored 40?

H/W

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

  (i) How many students took part in the experiment?

 (ii) What is the modal number of pictures remembered?

(iii) How many students remembered less than 7 pictures?

(iv) What is the range of the number of pictures remembered?

 (v) What is the median number of pictures remembered?
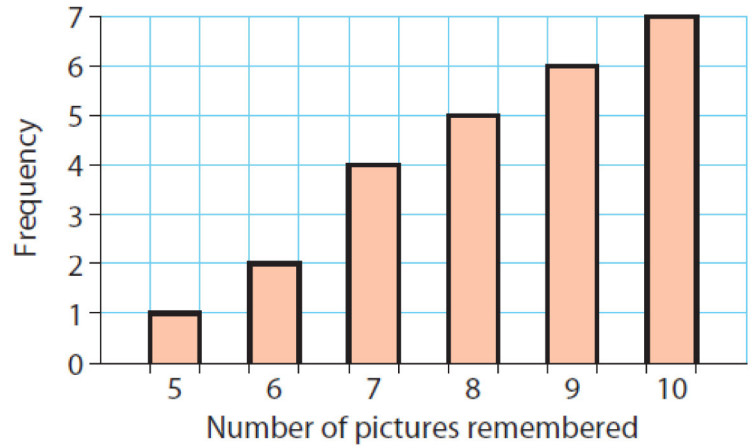
5. The bar chart shows the numbers of hours spent on homework each week by a group of second-year students.

The numbers of hours a group of second-year students spent doing homework
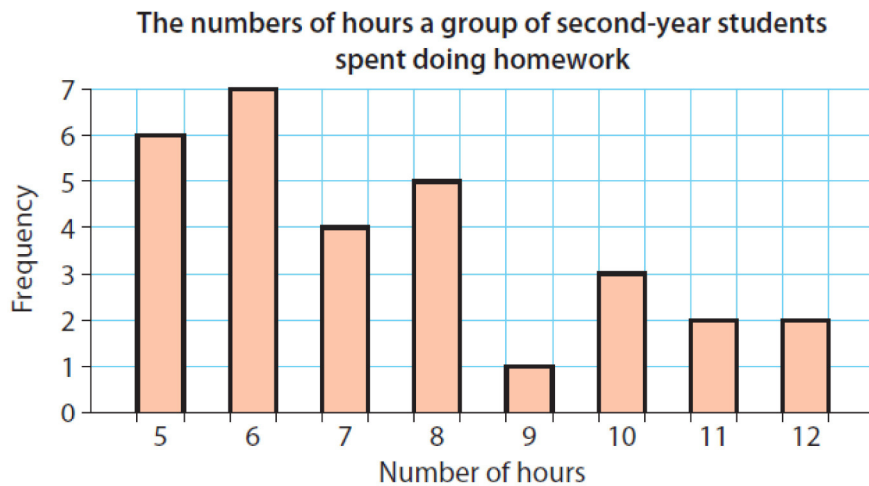
(i) How many students spent 6 hours doing homework?

(ii) What was the greatest number of hours a student spent doing homework?

(iii) How many students spent less than 7 hours doing homework?

(iv) How many students spent more than 10 hours doing homework?

(v) How many students were surveyed?

(vi) What percentage of students spent 8 hours doing homework?

(vii) If a student is selected at random, what is the probability that the student spent 10 hours doing homework?

6. Six coins were tossed 30 times and the number of heads showing each time was recorded.

The results are shown in the given bar chart.

Tossing 6 coins
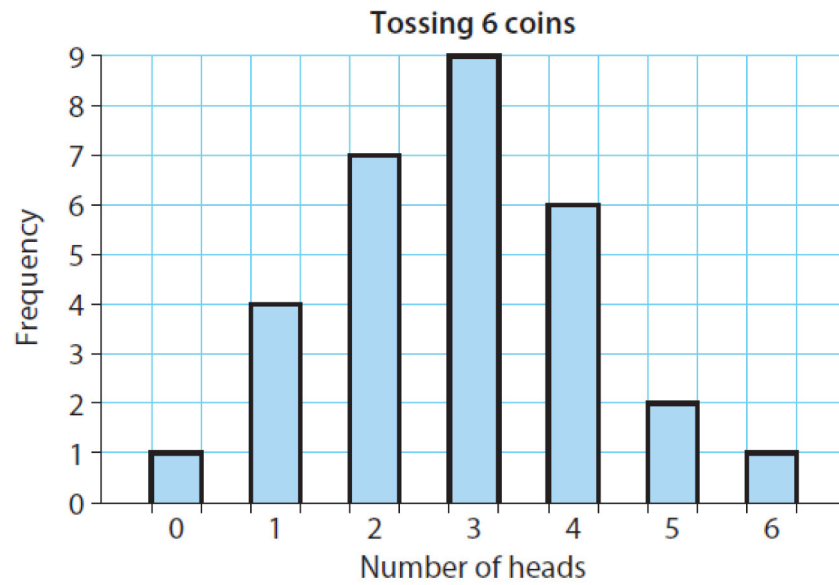
(i) How many times were 4 heads showing?

(ii) What was the modal number of heads showing?

(iii) If, for a particular toss, there were 2 heads, how many tails showed?

(iv) Write down the experimental probability of getting 4 heads.

7.

Computer game scores
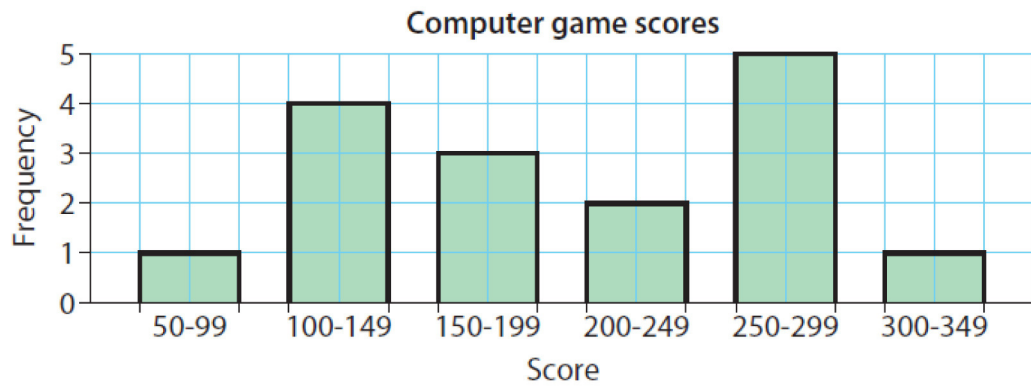
This graph shows scores in a computer game.

(i)   Scores of 250 or more won a prize. How many people won a prize?

(ii) How many people played altogether?

(iii) What is the greatest number of people who could have scored more than 220?

(iv) What is the smallest number of people who could have scored less than 160?

8. The numbers of goals scored in a series of football matches is represented in the bar chart shown on the right.

(i) How many matches were played?

(ii) Calculate the total number of goals scored.

(iii) Calculate the mean number of goals scored per match, correct to one decimal place.
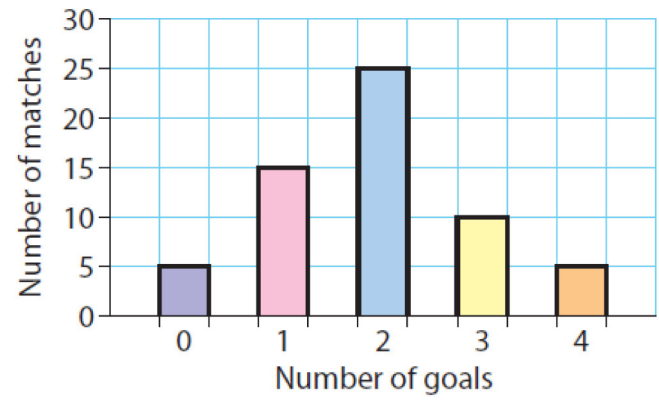
9. A survey was conducted to determine the numbers of hours students spent on the Internet per week. The results were as follows:

17	14	9	28	8	27	23	16	10	18
15	23	5	38	27	19	6	25	24	36
16	5	7	17	8	9	3	4	27	28
16	7	8	18	9	4	9	8	6	35

(i) Arrange this information in a frequency distribution table using class intervals (1–10), (11–20), (21–30) and (31–40).

(ii) Draw a bar chart to represent this information.

(iii) How many students used the Intrenet for more than 30 hours per week?

(iv) What percentage of students used the Internet for 25 hours or more per week?

(v) What percentage of students used the Internet for fewer than 21 hours per week?

10. A group of 20 male and 20 female teenagers were asked their opinion on whether physical education should be compulsory. The results are displayed in this double-column bar chart.

Should P.E. be compulsory?
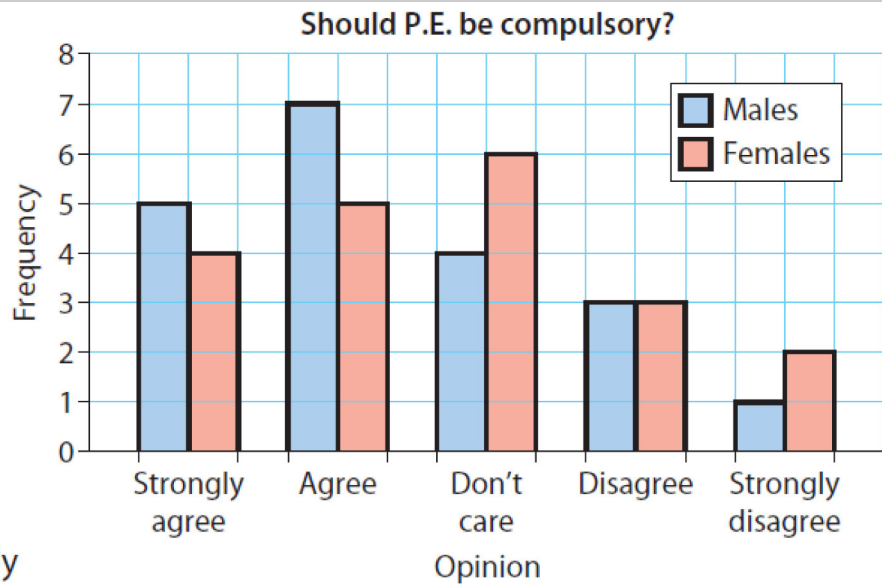
(i) How many females strongly agree with compulsory physical education?

(ii) How many males strongly agree with compulsory physical education?

(iii) What is the total number of students who strongly disagree with compulsory physical education?

(iv) If a student was selected at random, what is the probability that the student strongly agreed that physical education should be compulsory?
Give your answer as a decimal.

Answers

Exercise 13.1

1. (i) 15 (ii) 1
   (iii) 0 to 5 (i.e. 5) (iv) 20%
2. (i) 18°C (ii) 28°C (iii) 3
   (iv) $53\frac{1}{3}$% (v) $\frac{4}{15}$
3. (i) 42 (ii) 3 (iii) 10
   (iv) 29.2% (v) $\frac{1}{13}$
4. (i) 25 (ii) 10
   (iii) 3 (iv) 5–10 (i.e. 5)
   (v) 9
5. (i) 7 (ii) 12 (iii) 13 (iv) 4
   (v) 30 (vi) $16\frac{2}{3}$% (vii) $\frac{1}{10}$
6. (i) 6 (ii) 3 (iii) 4 (iv) $\frac{1}{5}$
7. (i) 6 (ii) 16 (iii) 8 (iv) 5
8. (i) 60 (ii) 115 (iii) 1.9
9. (iii) 3 (iv) $22\frac{1}{2}$% (v) 70%
10. (i) 4 (ii) 5 (iii) 3 (iv) 0.225