Dr Oliver Mathematics
GCSE Statistics Worksheet

This booklet consists of 20 questions across a variety of examination topics.
The total number of marks available is 161.

1. Consider the following fifteen pieces of data.

24	58	36	75	29	44	34	42
50	34	63	47	39	11	38	

(a) Calculate the mean and standard deviation for these data. (4)

Solution

$$\text{Mean} = \frac{\Sigma x}{n} = \frac{624}{15} = \underline{\underline{41.6}}.$$

$$\text{Standard deviation} = \sqrt{\frac{\Sigma x^2}{n} - \overline{x}^2} = \sqrt{\frac{29\,478}{15} - 41.6^2} = 15.317\,963\,31 \text{ (FCD)} = \underline{\underline{15.3 \text{ (3 sf)}}}.$$

(b) Construct a stem and leaf diagram for these data. (3)

Solution

1	1				
2	4	9			
3	4	4	6	8	9
4	2	4	7		
5	0	8			
6	3				
7	5				

Key: 7|5 means 75

(c) Find the median and the interquartile range for these data. (3)

Solution

Median = 39.

$Q_1 = 34$ and $Q_3 = 50$ and so

$$\text{IQR} = 50 - 34 = 16.$$

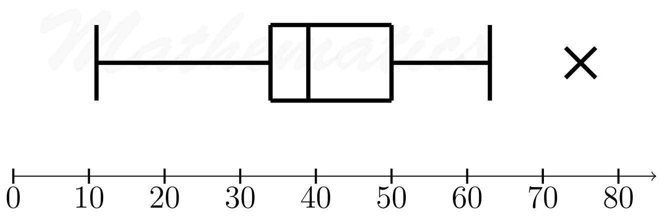
(d) Show that there is only one outlier and state its value. (2)

Solution

Lower threshold: $34 - 1.5 \times 16 = 10$ so no low outliers.
Upper threshold: $50 + 1.5 \times 16 = 74$ so 75 is an outlier.

(e) Construct a box and whisker plot for these data. (3)

Solution



(f) Comment on the skewness of the data. Explain your answer. (2)

Solution

$Q_2 - Q_1 = 39 - 34 = 5$
$Q_3 - Q_2 = 50 - 39 = 11$.
Hence, the data is positively skewed.

(g) Giving a reason for your answer, state whether you would recommend using the answers to part (a) or to part (c) to summarise these data. (2)

Solution

We use the median and the IQR since the data is skewed.

2. The individual letters of the word

$$STATISTICS$$

are written on 10 cards which are then shuffled.

One card is selected at random. Find the probability that it is

(a) a vowel, (1)

Solution

0.3.

(b) a T, given that it is a consonant. (2)

Solution

$\frac{3}{7}$.

The 10 cards are then shuffled again and the top three are turned over. Find the probability that

(c) all three of them have a T on them, (3)

Solution

$$\begin{aligned} P(TTT) &= \tfrac{3}{10} \times \tfrac{2}{9} \times \tfrac{1}{8} \\ &= \underline{\underline{\tfrac{1}{120}}}. \end{aligned}$$

(d) at least two of the cards show a consonant. (6)

Solution

$$\begin{aligned} P(\text{at least 2 consonants}) &= P(\text{2 consonants}) + P(\text{3 consonants}) \\ &= (3 \times \tfrac{7}{10} \times \tfrac{6}{9} \times \tfrac{3}{8}) + (\tfrac{7}{10} \times \tfrac{6}{9} \times \tfrac{5}{8}) \\ &= \tfrac{21}{40} + \tfrac{7}{24} \\ &= \underline{\underline{\tfrac{49}{60}}}. \end{aligned}$$

3. Alan and Bob decide to construct comparative pie charts for their respective CD collections. Alan owns 280 CDs and Bob owns 235 CDs. (3)

If Alan's pie chart has a radius of 6 cm what radius should Bob use?

Solution

Let the radius of Bob's pie chart be r. Then

$$\begin{aligned} & \pi \times 6^2 : \pi \times r^2 = 280 : 235 \\ \Rightarrow \quad & r = \sqrt{\frac{235}{280} \times 36} \\ \Rightarrow \quad & r = \underline{\underline{\tfrac{3\sqrt{658}}{14} \text{ or } 5.50 \text{ cm (3 sf)}}}. \end{aligned}$$

4. (a) State five characteristics of the normal distribution. (5)

Solution

Any five reasonable comments, e.g,
bell-shaped curve,
symmetrical about the mean, median, and mode,
around 68% of the distribution lies within 1 standard deviation of the mean,

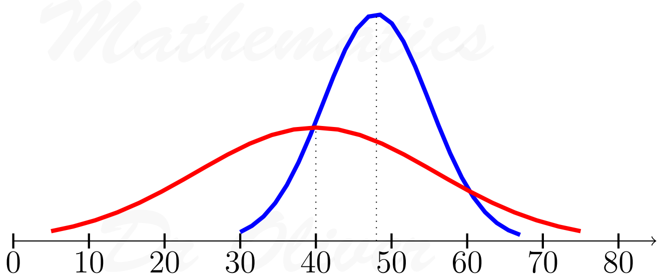
around 95% of the distribution lies within 2 standard deviations of the mean,
around 99% of the distribution lies within 3 standard deviations of the mean,
the range is approximately six times the standard deviation,
asymptotic to the horizontal axis.

The table shows the mean and the standard deviation of two normal distributions.

Distribution	Mean	Standard Deviation
A	48	4
B	40	10

(b) On the same axis, sketch these two distributions. (3)

Solution



(a) Peaks at means,

(b) the ranges are approximately six standard deviations, and

(c) A's peak higher than B's peak.

It is not known if a particular value has come from distribution A or distribution B.

(c) For the value of 60, explain which distribution it is more likely to have come from. (3)

Solution

$$A: \quad \frac{60-48}{4} = 3$$
$$B: \quad \frac{60-40}{10} = 2.$$

It is more likely to have come from B as it is fewer standard deviations above the mean.
(Accept a correct argument based on the area to the right of 60 in each sketch for (b) provided it makes reference to the area representing probability.)

5. The table shows the heights and masses of seven pupils.

Height, h cm	Mass, m kg
134	62
138	61
144	64
146	67
157	67
157	72
160	69

(a) Calculate Spearman's rank correlation for these data. (4)

Solution

Rank of h	Rank of m	d	d^2
1	2	1	1
2	1	1	1
3	3	0	0
4	4.5	0.5	0.25
5.5	4.5	1	1
5.5	7	1.5	2.25
7	6	1	1
			$\Sigma d^2 = 6.5$

Finally,

$$\begin{aligned}\text{SRCC} &= 1 - \frac{6\Sigma d^2}{n(n^2-1)} \\ &= 1 - \frac{6 \times 6.5}{7 \times 48} \\ &= \tfrac{99}{122} \text{ or } 0.884 \text{ (3 sf)}.\end{aligned}$$

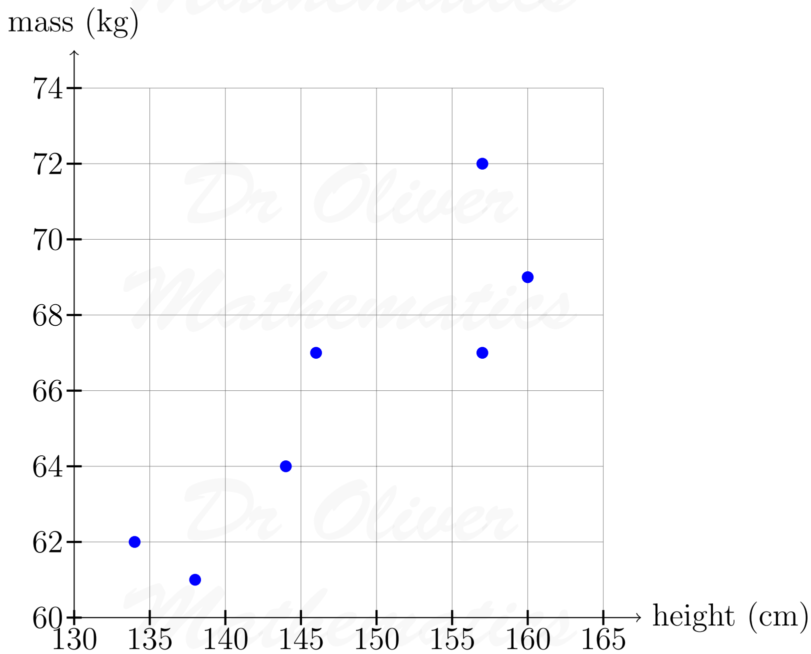
(b) Comment on the correlation between the heights and the masses of the students. (1)

Solution

It is (strong) positive correlation.

(c) Plot these data on a scatter diagram. (3)

Solution



The mean height is 148 cm.

(d) Calculate the mean mass. (2)

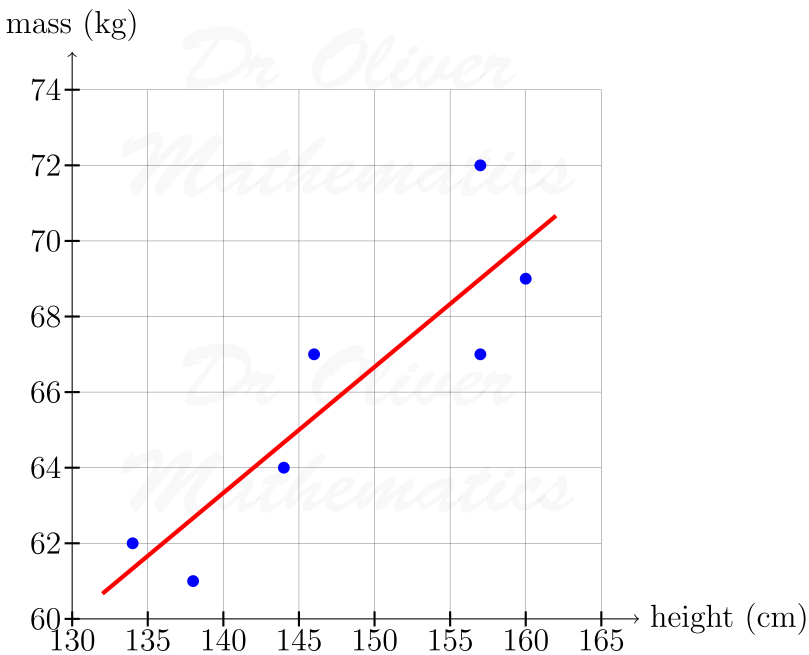
Solution

$$\text{Mean} = \frac{\Sigma m}{n} = \frac{462}{7} = \underline{\underline{66 \text{ kg}}}.$$

The line of best fit passes through the point $(154, 68)$.

(e) Draw the line of best fit on your scatter diagram. (2)

Solution



Line through $(154, 68)$ and $(148, \text{their (d)})$, running to the left of 134 and to the right of 160.

(f) Predict (2)

(i) the mass of a student that is 140 cm tall,

Solution

Correct read off: should be around $63\frac{1}{3}$ kg.

(ii) the height of a student that has a mass of 75 kg.

Solution

Correct read off: should be around 175 cm.

(g) Which of your answers to part (f) is the most reliable? Explain your answer. (1)

Solution

(f) (i) is more reliable as it uses interpolation whereas (ii) requires extrapolation.

(h) Find the equation of the line of best fit. (3)

Solution

$$\text{Gradient} = \frac{68-66}{154-148} = \frac{1}{3}.$$

Now,

$$m - 68 = \tfrac{1}{3}(h-154) \Rightarrow m - 68 = \tfrac{1}{3}h - \tfrac{154}{3}$$
$$\Rightarrow m = \tfrac{1}{3}h + \tfrac{50}{3}.$$

(i) Interpret the gradient of the line of best fit. (1)

Solution

E.g., every extra 1 cm of height adds $\frac{1}{3}$ kg to the mass.

6. (a) State three conditions that need to be met for the binomial distribution to be applicable. (3)

Solution

Any three correct comments, e.g.,
fixed number of trials,
independent events,
fixed probability of success.

A football player believes that he will score from a penalty kick five times out of six.

(b) Calculate the probability that he will score with at least four of his next five penalty kicks. (3)

Solution

$$
\begin{aligned}
\mathrm{P}(4 \text{ or more}) &= \mathrm{P}(4) + \mathrm{P}(5) \\
&= 5(\tfrac{4}{5})^4(\tfrac{1}{5}) + (\tfrac{4}{5})^5 \\
&= \tfrac{256}{625} + \tfrac{1024}{3125} \\
&= \underline{\underline{\tfrac{2304}{3125} \text{ or } 0.737\,28}}.
\end{aligned}
$$

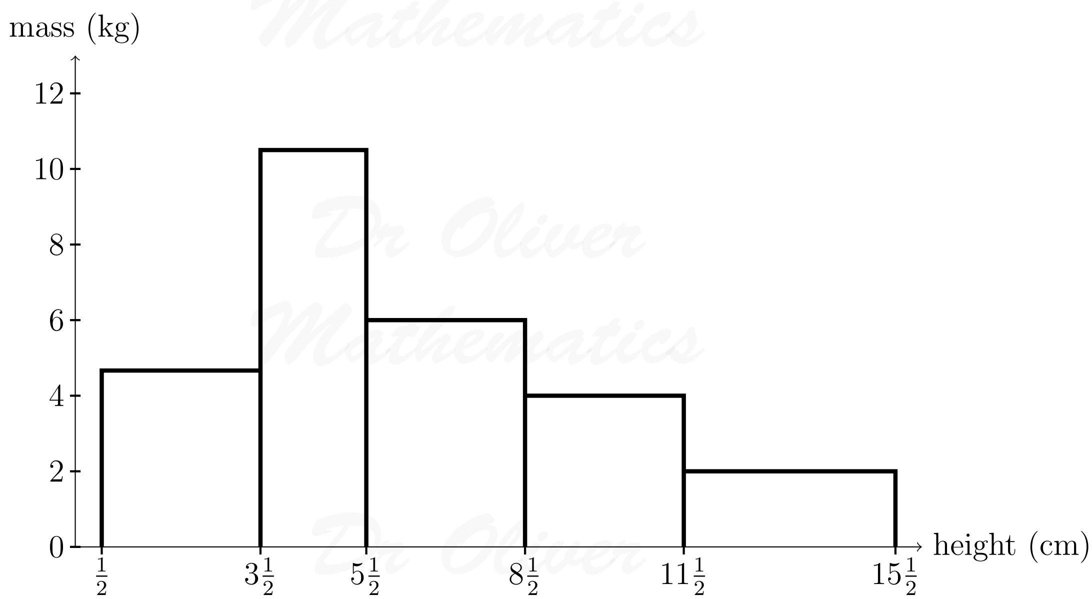
7. A student counts the number of letters of each word on a page of text. Her results are summarised in the table below.

Number of letters	1 − 3	4 − 5	6 − 8	9 − 11	12 − 15
Frequency	14	21	18	12	8

(a) Construct a histogram for these data. (3)

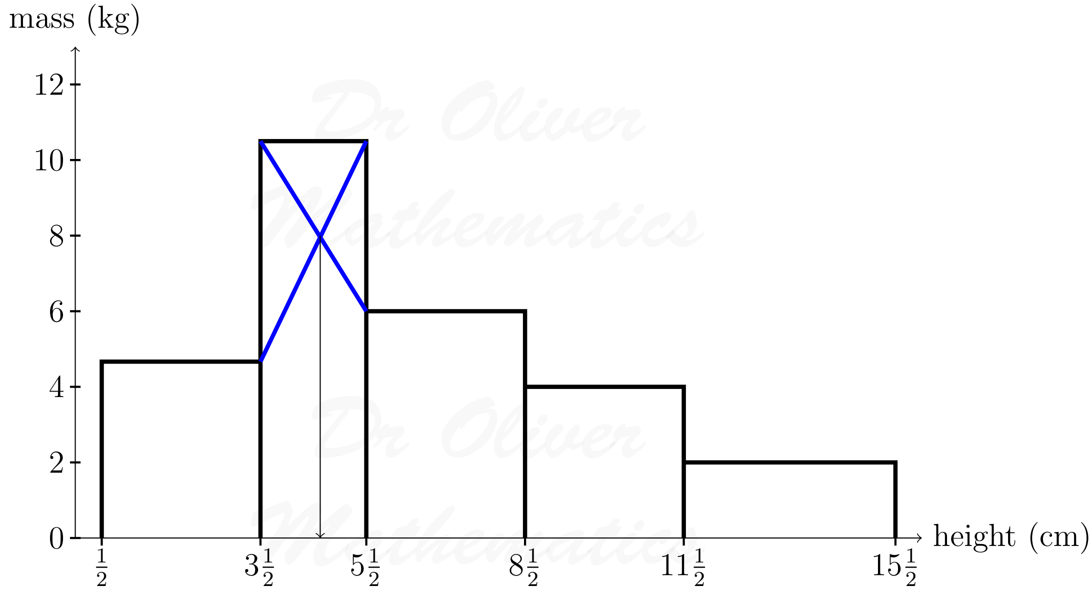
Solution

Number of letters	1 − 3	4 − 5	6 − 8	9 − 11	12 − 15
Frequency	3	2	3	3	4
Number of letters	$\frac{1}{2} - 3\frac{1}{2}$	$3\frac{1}{2} - 5\frac{1}{2}$	$5\frac{1}{2} - 8\frac{1}{2}$	$8\frac{1}{2} - 11\frac{1}{2}$	$11\frac{1}{2} - 15\frac{1}{2}$
Width	14	21	18	12	8
Frequency density	$4\frac{2}{3}$	$10\frac{1}{2}$	6	4	2



(b) Estimate the mode for these data. (2)

Solution



Correct read-off from a histogram: an accurate read-off from a correct histogram is $\underline{\underline{4\frac{39}{62} = 4.629\ldots}}$.

8. A bag contains six blue discs, four red discs, and two yellow discs. Three discs are chosen at random without replacement. Calculate the probability of getting

(a) three blue discs, (2)

Solution

$$\begin{aligned}\text{P(three blue discs)} &= \tfrac{6}{12} \times \tfrac{5}{11} \times \tfrac{4}{10} \\ &= \underline{\underline{\tfrac{1}{11} \text{ or awrt } 0.091.}}\end{aligned}$$

(b) two discs of one colour and one of another, (3)

Solution

$$\begin{aligned}
& \text{P(two discs of one colour and one of another)} \\
= \; & \text{P(2 blue)} + \text{P(2 red)} + \text{P(2 yellow)} \\
= \; & (3 \times \tfrac{6}{12} \times \tfrac{5}{11} \times \tfrac{6}{10}) + (3 \times \tfrac{4}{12} \times \tfrac{3}{11} \times \tfrac{8}{10}) + (3 \times \tfrac{2}{12} \times \tfrac{1}{11} \times \tfrac{10}{10}) \\
= \; & \tfrac{9}{22} + \tfrac{12}{55} + \tfrac{1}{22} \\
= \; & \underline{\underline{\tfrac{37}{55} \text{ or awrt } 0.673.}}
\end{aligned}$$

(c) one disc of each colour. (3)

Solution

$$\begin{aligned}
\text{P(one disc of each colour)} &= 6 \times \tfrac{6}{12} \times \tfrac{4}{11} \times \tfrac{2}{10} \\
&= \underline{\underline{\tfrac{12}{55} \text{ or awrt } 0.218.}}
\end{aligned}$$

9. Give three reasons for carrying out a pilot survey prior to a more detailed study. (2)

Solution

Any three correct comments, e.g.,
improve the questions,
get an idea of the range of answers,
estimate the non-response rate.

10. The table shows the results when a student rolled a dice 100 times.

Outcome	1	2	3	4	5	6
Frequency	15	18	17	19	13	18

(a) Find the mean for these data. (2)

Solution

x	1	2	3	4	5	6
f	15	18	17	19	13	18
fx	15	36	51	76	65	108
fx^2	15	72	153	304	325	648

Now,

$$\text{mean} = \frac{\Sigma fx}{n} = \frac{351}{100} = \underline{\underline{3.51}}.$$

(b) Find, to 3 significant figures, the standard deviation of these data. (2)

Solution

$\Sigma fx^2 = 1517$ and

$$\begin{aligned}\text{standard deviation} &= \sqrt{\frac{\Sigma x^2}{n} - \overline{x}^2} \\ &= \sqrt{\frac{1517}{100} - 3.51^2} \\ &= 1.688\,164\,684 \text{ (FCD)} \\ &= \underline{\underline{1.69 \text{ (3 sf)}}}.\end{aligned}$$

11. Among the evening classes offered by a college are Art and Creative Writing. The stem and leaf diagram below shows the ages of the people enrolled on each of these courses.

Art		Creative Writing
9	1	
3 2 1 1	2	
9 8 8	2	8 9 9
4 4 2 0	3	4
7 7 6	3	5 7 8
4 3 3 1	4	0 1 2 2
9 5	4	5 5 7 8
4 3 1	5	1 1 2 3 3 4
7 6 5	5	5 8
2	6	2 3
8 7	6	
4	7	
	7	9
	8	
	8	6

Key: 9|1 means 19 years old   Key: 2|8 means 28 years old

(a) Find the median and quartiles for those studying Art. (3)

Solution

LQ = $\underline{\underline{29}}$.

Median = $\underline{\underline{41}}$.

UQ = $\underline{\underline{54}}$.

(b) Find the median and quartiles for those studying Creative Writing. (3)

Solution

LQ = $\underline{\underline{38}}$.

Median = $\underline{\underline{47}}$.

UQ = $\underline{\underline{54}}$.

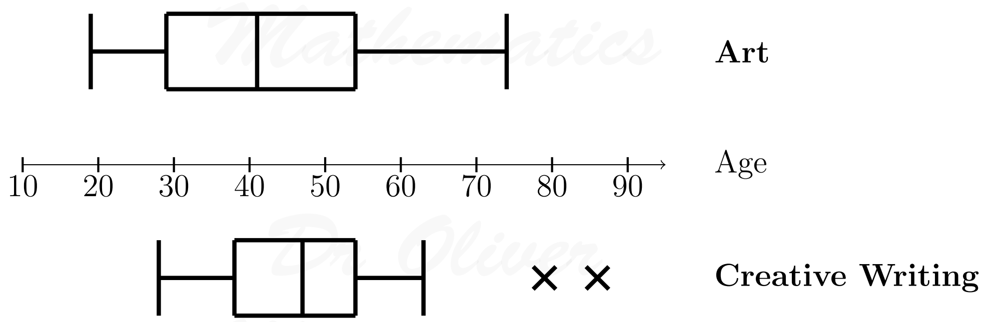
(c) Represent these data using box plots. (7)

Solution

Art

IQR = 54 − 29 = 25 so 1.5 × IQR = 37.5.
Lower: 29 − 37.5 = −8.5 so no low outliers.
Upper: 54 + 37.5 = 91.5 so no high outliers.

Creative Writing
IQR = 54 − 38 = 16 so 1.5 × IQR = 24.
Lower: 38 − 24 = 14 so no low outliers.
Upper: 54 + 24 = 78 so 34 so we have high outliers (78 and 86).



(d) Compare and contrast the ages of those taking each class. (4)

Solution

Correct contextual comment about averages, e.g., "Since the median for Creative Writing is higher than the median for Art the people on the Creative Writing course are older on average."

Correct contextual comment about spread, e.g., "Since the IQR for Art is higher than the IQR for Creative Writing there is more variation in the ages of those on the Art course."

Correct comment about outliers, e.g., "Creative Writing has two outliers whereas Art doesn't have any."

Correct comment about skew, e.g., "The distribution of the ages of those doing Art is positively skewed whilst the distribution for Creative Writing is negatively skewed."

12. Sarah conducts an experiment and obtains the following values.

x	1	2	3	4	5	6
y	5.1	3.6	2.9	2.7	2.7	2.4

Sarah believes that the values are related by a formula of the form

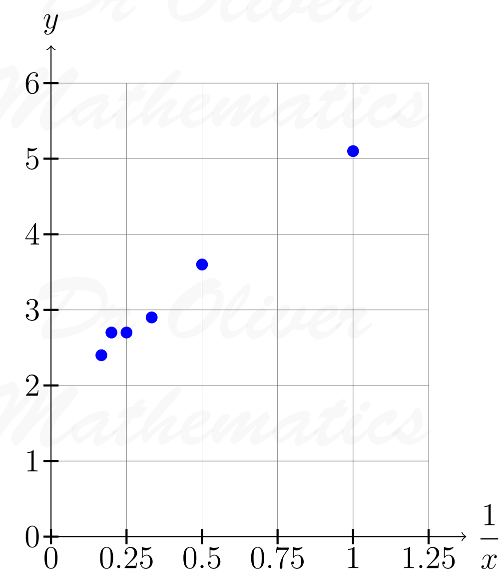
$$y = \frac{a}{x} + b,$$

where a and b are constants.

(a) Plot a graph of y against $\frac{1}{x}$. (2)

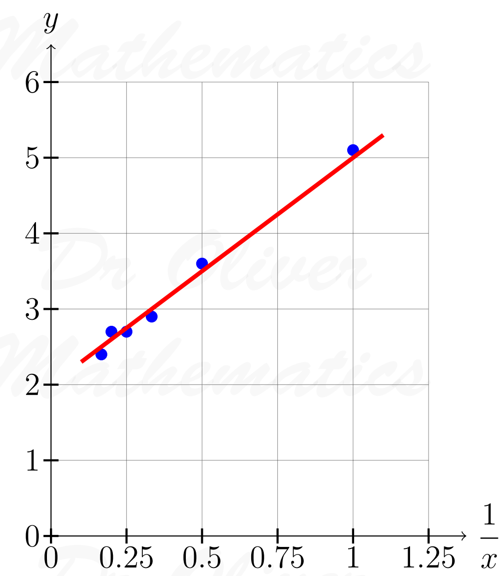
Solution

x	1	2	3	4	5	6
y	5.1	3.6	2.9	2.7	2.7	2.4
$\frac{1}{x}$	1	$\frac{1}{2}$	$\frac{1}{3}$	$\frac{1}{4}$	$\frac{1}{5}$	$\frac{1}{6}$



(b) Use your line to estimate the values of a and b. (5)

Solution



Draws a line of best fit.
Calculates the gradient to get a (approximately 3).
b is the y-intercept (approximately 2).

13. The table shows the times taken for a group of 30 students to complete a homework task.

Time, t minutes	Frequency
$0 < t \leqslant 10$	3
$10 < t \leqslant 15$	11
$15 < t \leqslant 25$	9
$25 < t \leqslant 40$	7

(a) Estimate the mean. Give your answer to 3 significant figures. (3)

Solution

t	f	Midpoint, x	fx	fx^2
$0 < t \leqslant 10$	3	5	15	75
$10 < t \leqslant 15$	11	12.5	137.5	1 718.75
$15 < t \leqslant 25$	9	20	180	3 600
$25 < t \leqslant 40$	7	32.5	227.5	7 393.75
			$\Sigma fx = 560$	$\Sigma fx^2 = 12\,787.5$

$$\begin{aligned} \text{Mean} &= \frac{\Sigma fx}{n} \\ &= \frac{560}{30} \\ &= 18\tfrac{2}{3} \text{ (exact)} \\ &= \underline{\underline{18.7 \text{ (3 sf)}}}. \end{aligned}$$

(b) Estimate the standard deviation. Give your answer to 3 significant figures. (3)

Solution

$$\begin{aligned} \text{Standard deviation} &= \sqrt{\frac{\Sigma x^2}{n} - \overline{x}^2} \\ &= \sqrt{\frac{12\,787.5}{30} - (18\tfrac{2}{3})^2} \\ &= 8.820\,745\,748 \text{ (FCD)} \\ &= \underline{\underline{8.82 \text{ (3 sf)}}}. \end{aligned}$$

14. A school has the following numbers of students in each year group.

Year	7	8	9	10	11
Students	115	123	118	89	105

A student needs a sample of 50 students and is considering using a systematic sample.

(a) Describe how a systematic sample of 50 students could be chosen. (3)

Solution

Put the students in a list.
Choose a random starting point.
Choose every 11th student.

Upon reflection the student decides to take a stratified random sample of 50 students.

(b) How many students should be selected from each year? (3)

Solution

Total = 550.
Year 7: $\frac{115}{550} \times 50 = 10.4\ldots$ so 10.
Year 8: $\frac{123}{550} \times 50 = 11.1\ldots$ so 11.
Year 9: $\frac{118}{550} \times 50 = 10.7\ldots$ so 11.
Year 10: $\frac{89}{550} \times 50 = 8.0\ldots$ so 8.
Year 11: $\frac{105}{550} \times 50 = 9.5\ldots$ so 10.

(c) Describe how the individual students could then be selected. (2)

Solution

E.g., number each student in Year 7 $1 - 115$.
Select the 10 pupils by drawing numbers from a hat or by generating random numbers.
And repeat for all the other years.

15. Design a questionnaire to collect data about the amount of time that members of Year 10 spend on revising for their GCSE Statistics examination. (2)

Solution

Suitable question with a time frame, e.g., "How much time did you spend revising for your GCSE Statistics examination last night/last week/a night on average? Tick the appropriate box."
At least three exhaustive and non-overlapping tick boxes (best defined using inequality notation: $0 \leqslant t < 10$, $10 \leqslant t < 30$, $30 \leqslant t < 60$, and $t \geqslant 60$).

16. A class contains thirty students. The mean time that it took them to complete a puzzle (3)

was $25\frac{1}{3}$ seconds. There were seventeen boys in the class and the mean time for the boys to complete the puzzle was 24 seconds. What was the mean time for the girls?

Solution

Let the mean time for the girls be x minutes. Then

$$25\tfrac{1}{3} = \frac{(17 \times 24) + (13 \times x)}{30} \Rightarrow 760 = 408 + 13x$$
$$\Rightarrow 13x = 352$$
$$\Rightarrow \underline{\underline{x = 27\tfrac{1}{13}}}.$$

17. Susan draws comparative pie charts to represent the fiction and non-fiction books that she owns. The radius for the fiction pie chart is 5 cm and the radius for the non-fiction pie chart is 5.5 cm. Given that Susan owns 242 non-fiction books how many fiction books does she have? (3)

Solution

Let the fiction books for be x books. Then

$$\pi \times 5^2 : \pi \times 5.5^2 = x : 242 \Rightarrow x = \frac{242 \times 25}{30.25}$$
$$\Rightarrow \underline{\underline{x = 200}}.$$

18. The table shows how many people died in a given town last year.

Group	Population	Deaths	Standard Population
Under 16	17 500	341	22%
16 – 35	24 000	204	24%
36 – 60	35 000	188	31%
Over 60	15 500	569	23%

(a) Calculate the crude death rate (per 1000 people) for the town. (2)

Solution

Total population = 92 000.
Total deaths = 1 302.

Then

$$\begin{aligned}\text{crude death rate} &= \frac{1\,302}{92\,000} \times 1000 \\ &= \underline{\underline{14\tfrac{7}{46} \text{ or } 14.2 \text{ per thousand}}}.\end{aligned}$$

(b) Calculate the standardised death rate (per 1000 people) for the town. (4)

Solution

$$\begin{aligned}&\text{Standardised death rate} \\ = \; &(\tfrac{341}{17.5} \times \tfrac{22}{100}) + (\tfrac{204}{24} \times \tfrac{24}{100}) + (\tfrac{188}{35} \times \tfrac{31}{100}) + (\tfrac{569}{15.5} \times \tfrac{23}{100}) \\ = \; &4\tfrac{251}{875} + 2\tfrac{1}{25} + 1\tfrac{582}{875} + 8\tfrac{687}{1550} \\ &(4.286\ldots + 2.04 + 1.665\ldots + 8.443\ldots) \\ = \; &\underline{\underline{\text{awrt } 16.4 \text{ per thousand}}}.\end{aligned}$$

(c) What is the advantage of the standardised death rate over the crude death rate? (1)

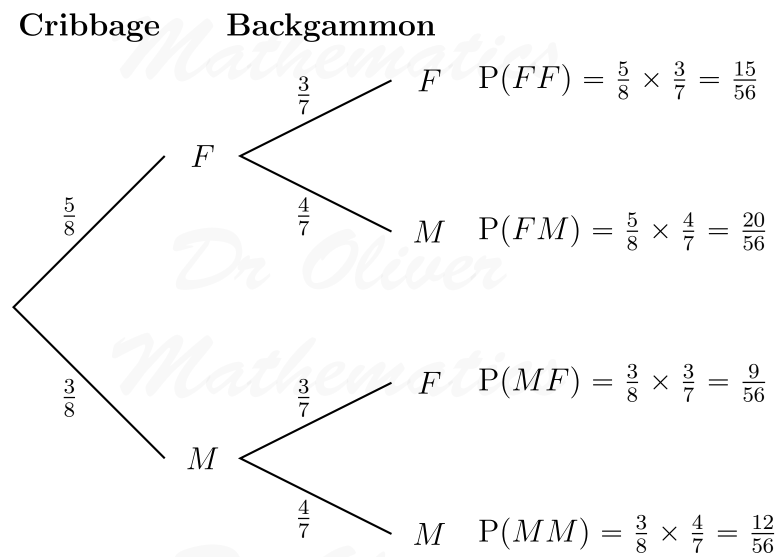
Solution

It allows comparisons to be made between different towns

19. Each Wednesday evening Frank and Martha play one game of cribbage followed by one game of backgammon. The probability that Frank wins the game of cribbage is $\frac{5}{8}$ and the probability that Martha wins the game of backgammon is $\frac{4}{7}$.

(a) Draw a tree diagram to represent the possible outcomes of an evening's play. (4)

Solution



(b) What is the probability that, on any given Wednesday, Frank wins exactly one game? (3)

Solution

$$\begin{aligned}\text{P(Frank wins exactly one game)} &= \left(\tfrac{5}{8} \times \tfrac{4}{7}\right) + \left(\tfrac{3}{8} \times \tfrac{3}{7}\right) \\ &= \tfrac{20}{56} + \tfrac{9}{56} \\ &= \underline{\underline{\tfrac{29}{56} \text{ or awrt } 0.518.}}\end{aligned}$$

Over a period of x weeks Martha won both the game of cribbage and the game of backgammon 24 times.

(c) Estimate the number of weeks in which she did not win either game. (3)

Solution

$$\begin{aligned}\text{P(Martha wins both)} &= \tfrac{3}{8} \times \tfrac{4}{7} \\ &= \tfrac{3}{14}\end{aligned}$$

and so

$$\text{total number of weeks} = 24 \div \tfrac{3}{14} = 112.$$

$$P(\text{Martha loses both}) = \tfrac{5}{8} \times \tfrac{3}{7} = \tfrac{15}{56}$$

and hence

$$\text{Martha loses both} = 112 \times \tfrac{15}{56} = \underline{\underline{30}}.$$

20. A company's accountant has compiled the following table to show the company's sales across a twelve-month period.

Month	Jan	Feb	Mar	Apr	May	Jun
Sales (£000)	1 210	1 320	1 490	2 200	1 230	1 340
Month	Jul	Aug	Sep	Oct	Nov	Dec
Sales (£000)	1 510	2 280	1 250	1 360	1 530	2 300

(a) Calculate four-month moving averages for these data. (2)

Solution

Jan-Apr:

$$\frac{1\,210 + 1\,320 + 1\,490 + 2\,200}{4} = \frac{6\,220}{4} = \underline{\underline{1\,555}}.$$

Feb-May:

$$\frac{1\,320 + 1\,490 + 2\,200 + 1\,230}{4} = \frac{6\,240}{4} = \underline{\underline{1\,560}}.$$

Mar-Jun:

$$\frac{1\,490 + 2\,200 + 1\,230 + 1\,340}{4} = \frac{6\,260}{4} = \underline{\underline{1\,565}}.$$

Apr-Jul:

$$\frac{2\,200 + 1\,230 + 1\,340 + 1\,510}{4} = \frac{6\,280}{4} = \underline{\underline{1\,570}}.$$

May-Aug:

$$\frac{1\,230 + 1\,340 + 1\,510 + 2\,280}{4} = \frac{6\,360}{4} = \underline{\underline{1\,590}}.$$

Jun-Sep:

$$\frac{1\,340 + 1\,510 + 2\,280 + 1\,250}{4} = \frac{6\,390}{4} = \underline{\underline{1\,595}}.$$

Jul-Oct:

$$\frac{1\,510 + 2\,280 + 1\,250 + 1\,360}{4} = \frac{6\,400}{4} = \underline{\underline{1\,600}}.$$

Aug-Nov:

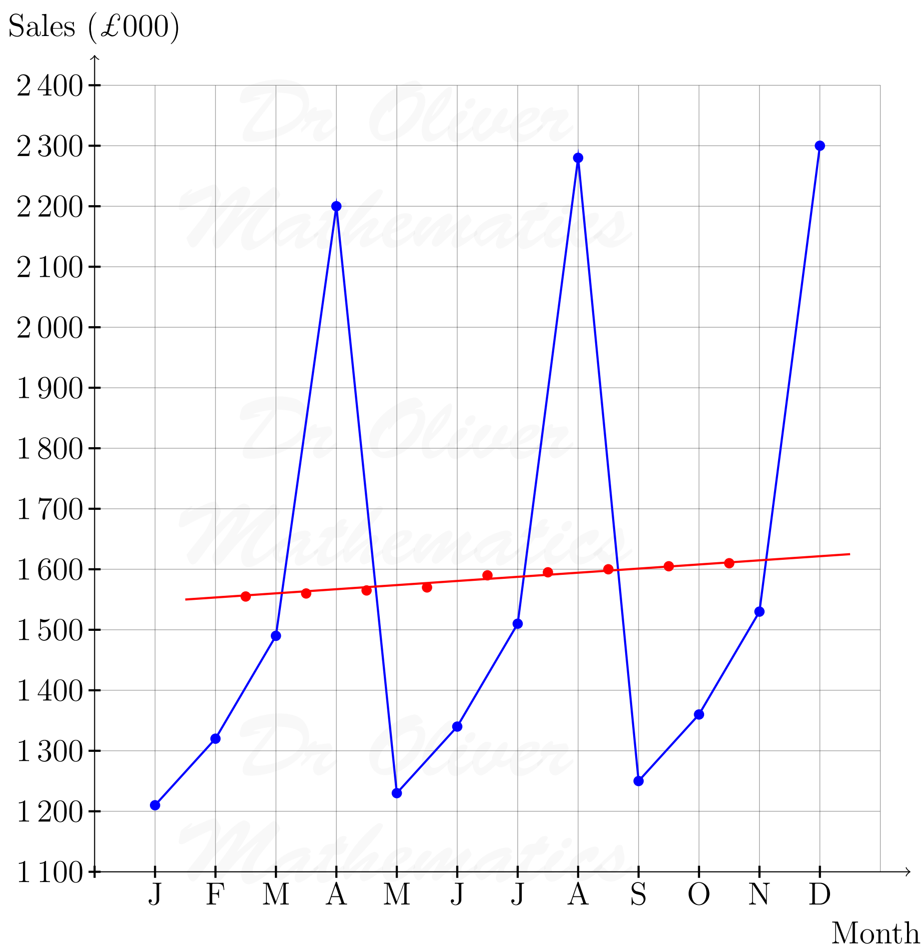
$$\frac{2\,280 + 1\,250 + 1\,360 + 1\,530}{4} = \frac{6\,420}{4} = \underline{\underline{1\,605}}.$$

Sep-Dec:

$$\frac{1\,250 + 1\,360 + 1\,530 + 2\,300}{4} = \frac{6\,440}{4} = \underline{\underline{1\,610}}.$$

(b) Plot these moving point averages on a graph and draw a trend line through them. (4)

Solution



(c) Use your trend line to estimate the sales for the next January. (3)

Solution

Correct read-off for the next value (approx 1 620). Then

$$
\begin{aligned}
& \frac{1\,360 + 1\,530 + 2\,300 + x}{4} = \text{`their' } 1\,620 \\
\Rightarrow \quad & 5\,190 + x = 4 \times (\text{`their' } 1\,620) \\
\Rightarrow \quad & x = 4 \times (\text{`their' } 1\,620) - 5\,190; \\
\Rightarrow \quad & x = \underline{\underline{1\,285 - 1\,295}}.
\end{aligned}
$$