

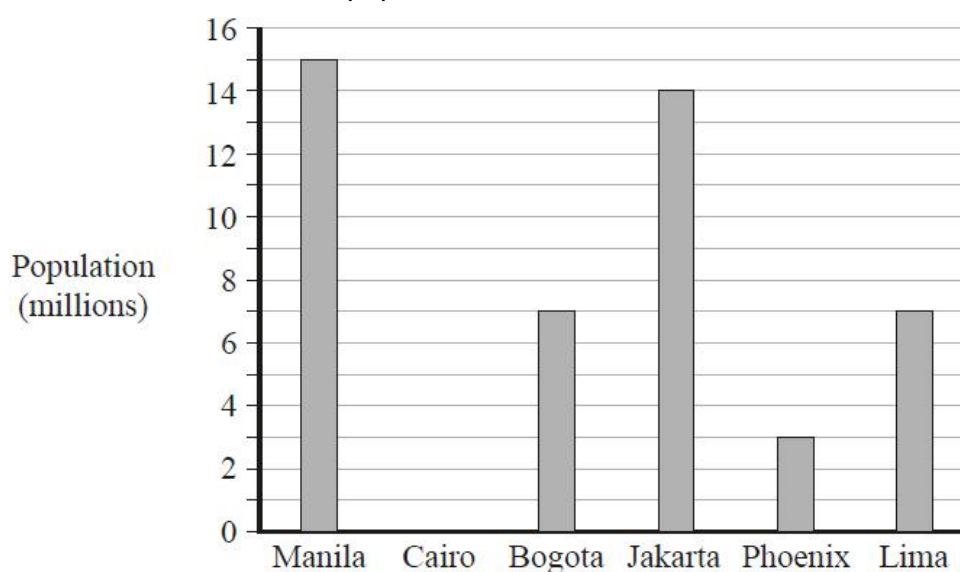


Unit 2 Revision Sheet H Representation of Data and Statistical Measures Foundation & Higher

Questions

Q1.

The bar chart gives information about the population, in millions, of each of five cities.



Cairo has a population of 12 million.

(a) Draw a bar on the bar chart to show this information.

(1)

The populations of two cities are equal.

(b) Write down the names of these two cities.

(1)

(c) Write down the name of the city with a population of 15 million.

(1)

(d) Work out the difference in population between Jakarta and Phoenix

(1)

In Manila, there are 90 badminton clubs and 60 football clubs.

(e) Find the ratio of the number of badminton clubs to the number of football clubs.

Give your ratio in its simplest form.

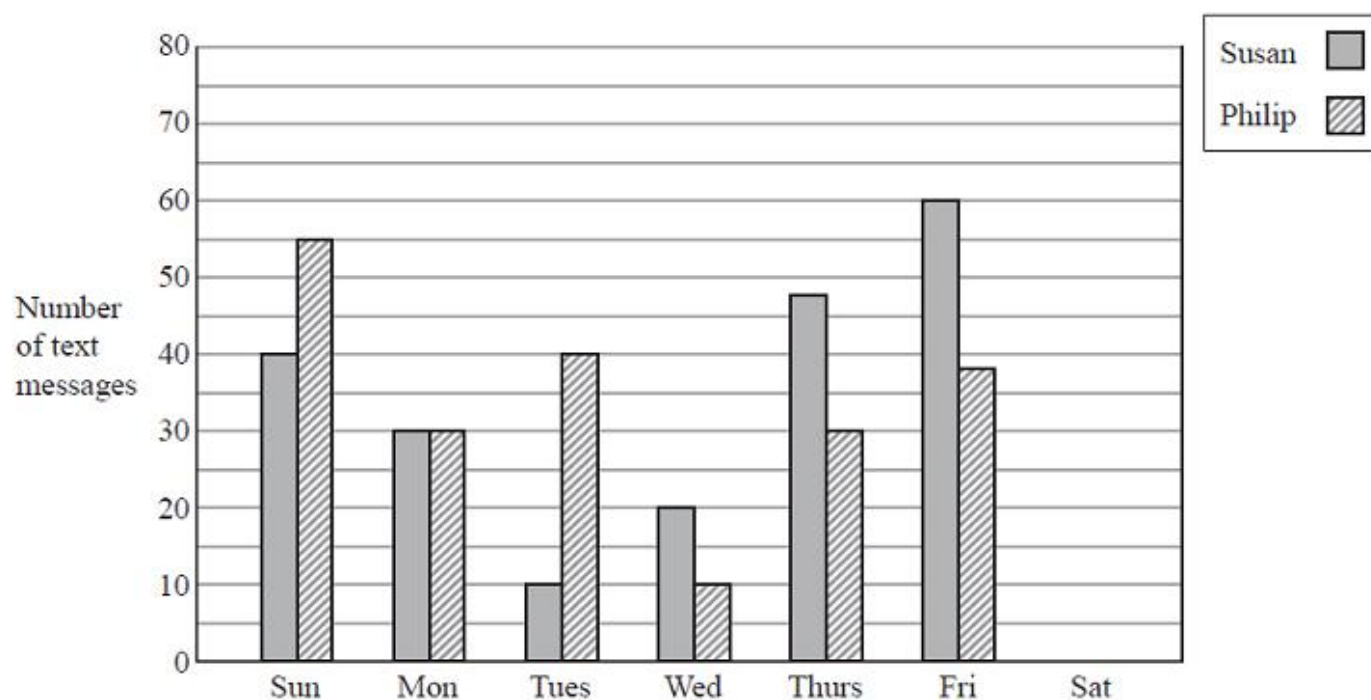
(2)

(Total for question = 6 marks)



Q2.

The bar chart shows information about the numbers of text messages that Susan and Philip sent from their mobile phones on each of six days one week.



(a) On which day did Susan send twice as many text messages as Philip?

(1)

(b) How many text messages did Philip send on Sunday?

(1)

On Saturday, Susan sent 15 text messages and Philip sent 40 text messages.

(c) Show this information on the bar chart.

(1)

In the following week, Philip sent a total of 180 text messages.
Of these text messages, 25% were sent to Susan.

(d) Work out 25% of 180

(2)

(Total for question = 5 marks)

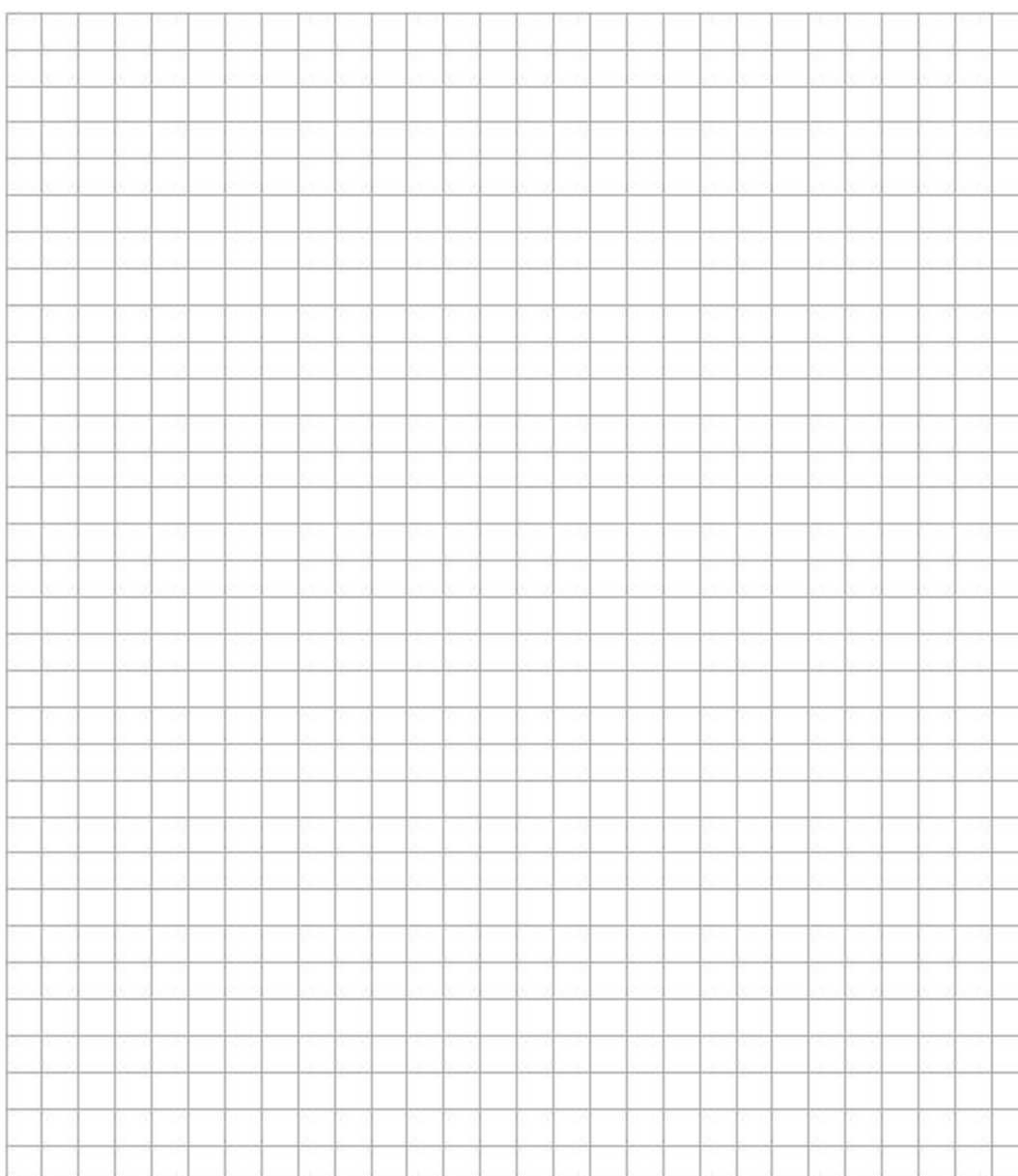


Q3.

The table shows the average monthly temperatures, in °C, for four months in London and in Cairo.

	January	April	July	October
London (°C)	5	11	19	13
Cairo (°C)	14	21	28	23

Show this information by drawing a suitable diagram on the grid below.



(Total for question = 4 marks)



Q4.

Paula asks 16 members of her class the number of pets they each have.
Here are her results.

1 2 2 4 0 1 2 1
3 3 4 1 1 0 3 2

(a) Complete the frequency table for her results.

Number of pets	Tally	Frequency
0		
1		
2		
3		
4		

(2)

(b) Write down the mode for the number of pets.

(1)

(c) Work out the range for the number of pets.

(1)

(Total for question = 4 marks)

**Q5.**

The table shows information about the number of pieces of homework each student in Year 11 received last week.

Number of pieces of homework	Frequency
3	4
4	8
5	10
6	12
7	4

(a) Work out the range of the number of pieces of homework.

(2)

(b) Write down the mode of the number of pieces of homework.

(1)

(c) Work out the mean number of pieces of homework.

Give your answer correct to one decimal place.

(3)

(Total for question = 6 marks)

Q6. The table shows information about the lengths of time, in minutes, 120 customers spent in a supermarket.

Length of time (L minutes)	Frequency
$20 < L \leq 30$	6
$30 < L \leq 40$	26
$40 < L \leq 50$	31
$50 < L \leq 60$	40
$60 < L \leq 70$	17

(a) Write down the modal class.

(1)

(b) Work out an estimate for the mean length of time spent by the 120 customers in the supermarket.

(4)

(Total for question = 5 marks)



Q7.

The table shows information about the number of birds each of 40 people counted in their garden one morning.

Number of birds	Frequency
1 – 5	5
6 – 10	10
11 – 15	16
16 – 20	9

(a) Write down the modal class.

(1)


































(b) Work out an estimate for the mean number of birds.


(4)

(Total for question = 5 marks)

Q8.

The pictogram gives information about the number of emails Sami sent on each of five days last week.

Monday	   
Tuesday	      
Wednesday	      
Thursday	      
Friday	       

 represents 8 emails

Work out the mean number of emails Sami sent on these 5 days.

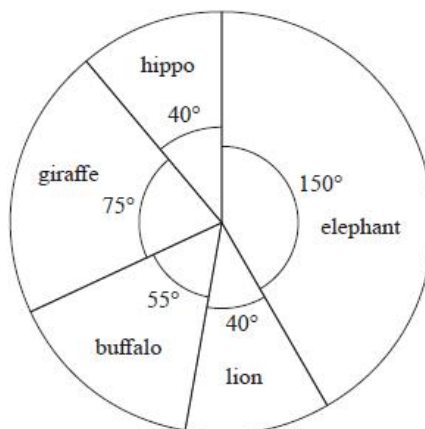
(Total for question = 4 marks)



Q9.

Jerry went on holiday to a game reserve.
He recorded the number of each of five different types of animal he saw.

The pie chart below gives information about his results.



- (a) Write down the ratio of the number of elephants Jerry saw to the number of giraffes he saw.
Give your ratio in its simplest form.

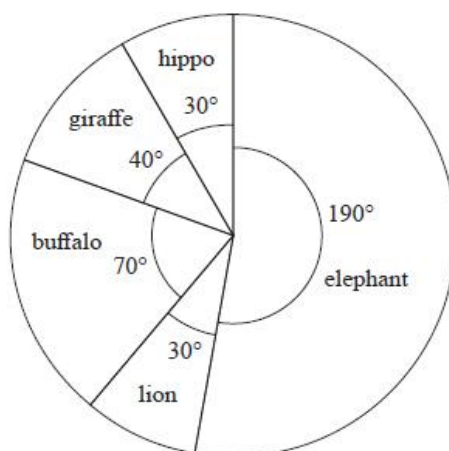
(2)

Jerry saw 8 lions.

- (b) How many giraffes did Jerry see?

(2)

Lesley went on holiday to the same game reserve.
She also recorded the number of each of five different types of animal she saw.
The pie chart below gives information about her results.



Lesley says,

"The pie charts show that I saw more elephants than Jerry saw."



(c) Is Lesley correct?

You must give a reason for your answer.

(1)

(Total for question = 5 marks)

Q10.

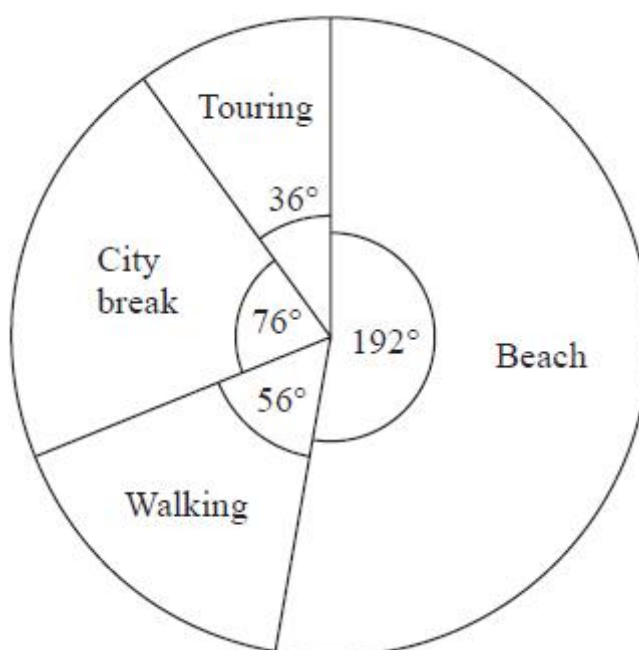
Kwo asked 40 people where they went on holiday last year.
He is going to draw a pie chart for his results.

16 of the 40 people said they went to Egypt.

(a) Work out the size of the angle in the pie chart for Egypt.

(2)

Tiffany asked some people what type of holiday they each like the best.
She used her results to draw this pie chart.



48 of the people that Tiffany asked said they like beach holidays the best.

(b) Work out how many of the people Tiffany asked said they like walking holidays the best.

(2)

(Total for question = 4 marks)



Q11.

30 students in a class sat a Mathematics test.
The mean mark in the test for the 30 students was 26.8

13 of the 30 students in the class are boys.
The mean mark in the test for the boys was 25

Find the mean mark in the test for the girls.
Give your answer correct to 3 significant figures.

(Total for question = 3 marks)



Mark Scheme

Q1.

Question	Working	Answer	Mark	Notes
(a)		Bar drawn to 12	1	B1
(b)		Bogota, Lima	1	B1
(c)		Manila	1	B1
(d)		11	1	B1
(e)	90 : 60 oe			M1 or for an answer of 2 : 3
		3 : 2	2	A1 cao
				Total 6 marks

Q2.

Question	Working	Answer	Mark	Notes
(a)		Wednesday	1	B1 Accept Wed
(b)		55	1	B1
(c)		Correct Bars	1	B1 Susan 1.5 cm, Philip 4 cm (and having the correct key)
(d)	$\frac{25}{100} \times 180$ or 0.25×180 or $180 \div 4$ oe		2	M1
		45		A1
				Total 5 marks



Q3.

Question	Working	Answer	Mark	Notes
				B1 for key or suitable labels to identify London and Cairo or temperature axis scaled (linear scale, allow 1 error for this mark) and labelled B1 for diagram showing data for at least 3 months for both cities (may not be accurate) (eg. dual bar chart, composite bar chart, time series) B1 for correct heights for at least 4 bars or at least 4 correct plots (ft from a scale with only 1 error) B1 fully correct diagram
		correct graph	4	

Q4.

Q	Working	Answer	Mark	Notes
a			2	M1 for at least 2 correct tallies or frequencies
		2, 5, 4, 3, 2		A1 mark frequencies only – in either column
b		1	1	B1 allow ft from (a)
c		4	1	B1
				Total 4 marks

Q5.

Q	Working	Answer	Mark	Notes
(a)	$7 - 3$		2	M1 or $3 - 7$
		4		A1
(b)		6	1	B1
(c)	$3 \times 4 + 4 \times 8 + 5 \times 10 + 6 \times 12 + 7 \times 4 (= 194)$ $(12 + 32 + 50 + 72 + 28)$		3	M1 for at least 4 correct products and intention to add. Products may be seen by the side of the table
	$"194" \div (4 + 8 + 10 + 12 + 4) (= 5.105....)$ "194" \div "38"			M1 dep on M1
	<i>Working not required, so correct answer scores full marks (unless from obvious incorrect working)</i>	5.1		A1 accept 5.1–5.106
				Total 6 marks



Q6.

Q	Working	Answer	Mark	Notes
a		$50 < L \leq 60$	1	B1 oe eg 50 - 60
b	$25 \times 6 + 35 \times 26 + 45 \times 31$ $+ 55 \times 40 + 65 \times 17$ $(150 + 910 + 1395 + 2200$ $+ 1105)(= 5760)$			M2 For correct products using midpoints (allow one error) with intention to add. M1 for products using frequency and a consistent value within the range (allow one error) with intention to add or correct products using midpoints (allow one error) without addition
	"5760" \div "120"			M1 dep on M1
		48	4	A1
				Total 5 marks

Q7.

Question	Working	Answer	Mark	Notes
(a)		11 – 15	1	B1
(b)	$3 \times 5 + 8 \times 10 + 13 \times 16 + 18 \times 9$ or $15 + 80 + 208 + 162$ or 465 $(3 \times 5 + 8 \times 10 + 13 \times 16 + 18 \times 9) \div 40$ or $(15 + 80 + 208 + 162) \div 40$ or $465 \div 40$			M2 $f \times n$ for at least 3 products with correct mid-interval values and intention to add If not M2 then award M1 for n used consistently for at least 3 products within interval and intention to add or at least 3 products with correct mid-interval values with no intention to add M1 dep on M1 NB: accept their 40 if addition shown
		11.625	4	A1 Accept 11.6 or 11.63 or 12 if correct working seen ($465 \div 40$ oe)



Q8.

Question	Working	Answer	Mark	Notes
	$3.5 + 5.75 + 6.5 + 6.25 + 8 (=30)$ or $3.5 \times 8 (=28)$ or $5.75 \times 8 (=46)$ or $6.5 \times 8 (=52)$ or $6.25 \times 8 (=50)$ or $8 \times 8 (=64)$		4	M1 (allow one error in sum to 30)
	$"30" \div 5 (=6)$ or $"30" \times 8 (=240)$ or $"28" + "46" + "52" + "50" + "64" (=240)$			M1 Dep on M1 and if adding values, must be 5 values with intention to add
	$"6" \times 8$ or $"240" \div 5$			M1 dep
		48		A1
				Total 4 marks

Q9.

Question	Working	Answer	Mark	Notes
(a)	$150 : 75$			M1 for any ratio equivalent to 150 : 75 eg 6 : 3 or 1 : 2
(b)	$75 \div 40 \times 8$ oe or $40 \div 8 (=5)$ and $75 \div "5"$	2 : 1	2	A1 Accept 1 : 0.5 oe M1
(c)		15 eg don't know with reason	2 1	A1 B1 E.g. Can't be sure as pie chart shows proportions and not actual numbers, We don't know how many each degree represents, etc



Q10.

Question	Working	Answer	Mark	Notes
(a)	$\frac{16}{40} \times 360$ oe or $\left(\frac{16}{40} \times 100\right) \frac{40}{100} \times 360$ oe or $360 \div (40 \div 16)$		2	M1 Allow two stages e.g. $\left(\frac{16}{40} \times 100 \text{ and } \frac{40}{100} \times 360\right)$ oe
		144		A1 cao
(b)	E.g. $48 \div 192 \times 56$ oe or $\left(\frac{48}{192} \times 100 = 25\right) \frac{25}{100} \times 56$ oe or $(192 \div 48 (= 4) \text{ and } 56 \div 4)$ or $192 \div 56 (= 3.4...) \text{ and } 48 \div 3.4...$		2	M1
		14		A1 cao
Total 4 marks				

Q11.

Question	Working	Answer	Mark	Notes
	e.g. $30 \times 26.8 (= 804)$ or $13 \times 25 (= 325)$ or $(26.8 - 25) \times 30$ or 1.8×30			M1 for finding the total marks for the boys or the total test marks
	e.g. $(30 \times 26.8 - 13 \times 25) \div (30 - 13) (= 28.1764...)$ or $(804 - 325) \div (30 - 13) (= 28.1764...)$ or $(804 - 325) \div 17 (= 28.1764...)$ or $((26.8 - 25) \times 30) \div 17 + 25 (= 28.1764...)$ or $1.8 \times 30 \div 17 + 25 (= 28.1764...)$			M1 for a complete method to find the mean mark for the girls
		28.2	3	A1 accept 28.15 – 28.2 (accept without working) (Accept 28 from complete working)
Total 3 marks				