GCSE STATISTICS: TERM 10.3 MIXED TOPIC TASKS

Week 1.1

There are n rabbits in a park
Elouise manages to capture 8 of them and tags them.
She releases them back into the park and a while later takes another sample of 20 and finds that 3 are tagged.
Estimate the number of rabbits in the park

Calculate the mode for the following data set

212, 224, 210, 213, 215, 226, 213, 220, 217, 210, 218, 222

Calculate the standard deviation for the following data set

x	100	200	300	400
f	2	8	5	3

Give an example of a sample frame that can be used to identify all of the students in year 10 at Windsor High School

Calculate the median for the following data set

x	100	101	102	103	104	105
freq	18	14	20	22	19	20

Use the data summarized below to calculate the standard deviation

$\Sigma x = 12.7$ $\Sigma x^2 = 141.4$ $n = 14$

Number these random sample steps 1-4

Ignore repeats and numbers > 25
Number all of the shops from 1-25
Choose the corresponding shops
Choose 6 random numbers using a RNG

Calculate an estimate for the mean for the following data set

x	0-20	20-40	40-60	60-80
freq	8	5	7	12

Calculate the standard deviation for the following data set:

5, 9, 10, 8, 5, 7, 6, 3, 2, 4

Score ___ / 9

GCSE STATISTICS: TERM 10.3 MIXED TOPIC TASKS

Week 1.2

There are n fish in a lake
Jacko manages to catch 10 of them and tags them.
He releases them back into the lake and 3 days late catches another s 15 and finds that 7 are tagged.
Estimate the number of fish in the lake

Calculate the mode for the following data set

8.5, 8.6, 8.2, 8.1, 8.4, 8.5, 8.5, 8.7, 8.9, 8.1, 8.5, 8.1, 8.2

Calculate the variance for the following data set

x	0.1	0.2	0.3	0.4
f	18	12	16	2

Give an example of a sample frame that can be used to identify all of the employees at Tilbury Douglas Ltd

Calculate the median for the following data set

x	1	2	3	4	5	6
freq	15	18	19	16	17	12

Use the data summarized below to calculate the variance

$\Sigma(x-\bar{x})^2 = 119.4$ $\Sigma x = 287$ $n = 46$

Calculate the number required for each strata for a sample size of 30

Y7	Y8	Y9	Y10	Y11
125	120	108	115	97

Calculate an estimate for the mean for the following data set

x	0-5	5-10	10-15	15-20
freq	8	6	2	9

Calculate the variance for the following data set:

187, 156, 195, 150, 128, 177, 181, 190, 165, 155

Score ___ / 9

GCSE STATISTICS: TERM 10.3 MIXED TOPIC TASKS

Week 2.1

A tally chart has been completed ***incorrectly*** for the information shown below. Highlight the error(s)

Red, Yellow, Red, Blue, Red, Green, Green, Yellow, Red, Red, Blue, Red, Yellow, Green, Green, Green, Red, Red, Yellow

Chocolate	Tally	Frequency
Red	𝍸 III	7
Yellow	IIII	4
Blue	II	2
Green	𝍸	4

A tally chart has been completed ***incorrectly*** for the information shown below. Highlight the error(s)

3, 3, 5, 4, 1, 3, 5, 2, 1, 2, 0, 3, 2, 5, 4, 5, 4, 4, 4, 2, 0, 3

No of hot dinners	Tally	Frequency
0	II	2
1	II	2
2	IIII	4
3	IIIII	5
4	IIIII	5
5	IIII	4

A tally chart has been completed ***incorrectly*** for the information shown below. Highlight the error(s)

7, 22, 34, 28, 9, 31, 32, 36, 8, 10, 26, 23, 39, 4, 10, 5, 3, 26, 37, 34, 29, 24, 27, 31, 6

Height	Tally	Frequency
$0 < x \leq 10$	𝍸 II	7
$10 < x \leq 20$	II	2
$20 < x \leq 30$	𝍸 III	8
$30 < x \leq 40$	𝍸 III	8

From the pictogram shown below answer the corresponding question

Colour	KEY = 3 flags
Red	
Yellow	
Blue	

How many blue flags were seen? ____

From the pictogram shown below answer the corresponding question

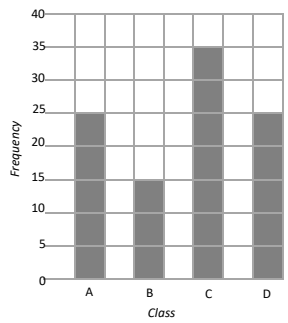
Drink	KEY = 2 cups
Water	
Pop	
Tea	

How many drink were purchased that weren't tea? ____

From the pictogram shown below answer the corresponding question

Subject	KEY = 4 students
Maths	
English	
Art	

What was the most popular subject? _____

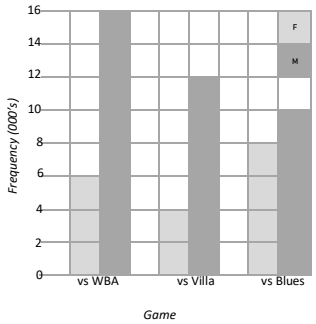


The bar chart shows the number of points scored by each class in January

From the bar chart shown answer the following:

Which class scored the most points in January?

_____

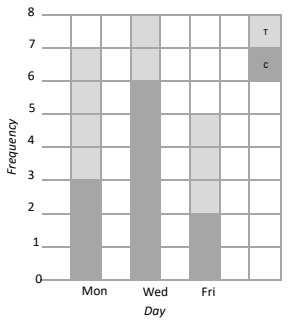


The duel bar chart shows the number of males and females at each game

From the bar chart shown answer the following:

How many males attended the three games?

_____



The composite bar chart shows the number of tea & coffees drunk by staff

From the bar chart shown answer the following:

Which drink was more popular?

_____

Score ___ / 9

GCSE STATISTICS: TERM 10.3 MIXED TOPIC TASKS

Week 2.2

From the pictogram shown below answer the corresponding question

Colour	KEY = 3 flags
Red	
Yellow	
Blue	

How many more red flags were seen than yellow? _____

From the pictogram shown below answer the corresponding question

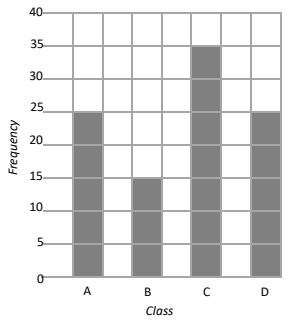
Drink	KEY = 2 cups
Water	
Pop	
Tea	

How many more cold drinks were purchased than hot? ___

From the pictogram shown below answer the corresponding question

Subject	KEY = 4 students
Maths	
English	
Art	

How many students did not choose Maths? _____

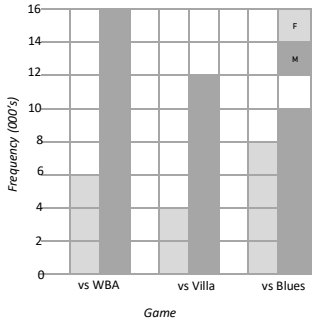


The bar chart shows the number of points scored by each class in January

From the bar chart shown answer the following:

Which two classes scored the same number of points?

_____

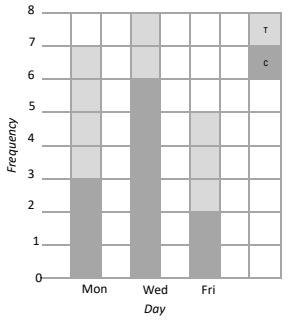


The duel bar chart shows the number of males and females at each game

From the bar chart shown answer the following:

To which game did most people attend?

_____



The composite bar chart shows the number of tea & coffees drunk by staff

From the bar chart shown answer the following:

On which days did teachers drink more coffee then tea?

_____

A pie chart is to be drawn for the following data to represent the numbers of pets sold by a pet shop in 2022

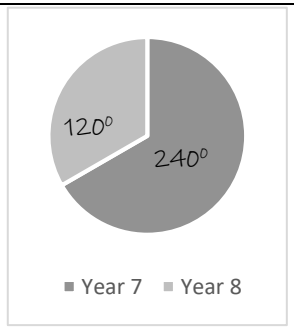
Calculate the angle to be drawn for each type of pet. You DO NOT need to draw the pie chart

Pet	Sales	Angle
Bird	6	
Hamster	27	
Rat	19	
Rabbit	30	

The pie chart shows information on the house points collected by year 7 and 8 students at Lovington High School.

What proportion of house points were collected by year 7?

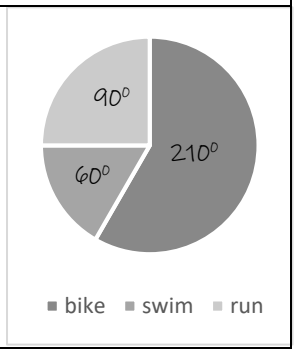
_____



The pie chart shows the strongest discipline of all 36 triathletes in the world championships

How many triathletes claimed that running was their strongest discipline?

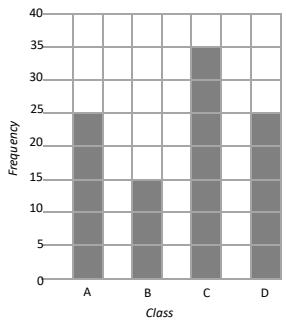
_____



Score ___ / 9

GCSE STATISTICS: TERM 10.3 MIXED TOPIC TASKS

Week 3.1

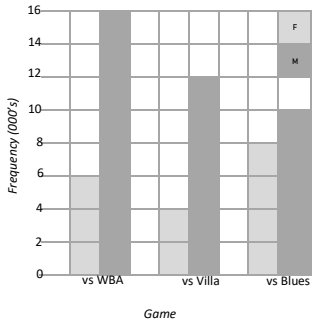


The bar chart shows the number of points scored by each class in January

From the bar chart shown answer the following:

How many more points did class C score than D?

_____

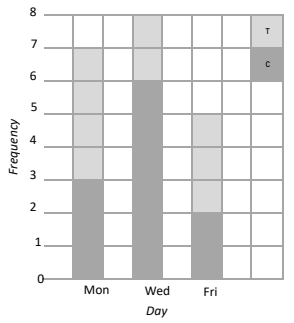


The duel bar chart shows the number of males and females at each game

From the bar chart shown answer the following:

How many more males than females attended the Villa match?

_____



The composite bar chart shows the number of tea & coffees drunk by staff

From the bar chart shown answer the following:

How many teachers drank tea on Wednesday?

_____

A pie chart is to be drawn for the following data to represent the numbers of pets sold by a pet shop in 2022

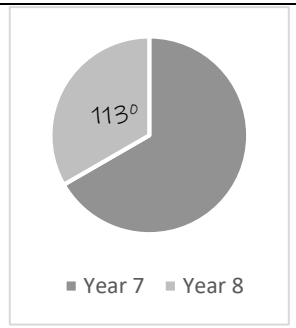
Calculate the angle to be drawn for each type of pet. You DO NOT need to draw the pie chart

Pet	Sales	Angle
Bird	12	
Hamster	35	
Rat	24	
Rabbit	30	

The pie chart shows information on the house points collected by year 7 and 8 students at Lovington High School.

What proportion of house points were collected by year 7?

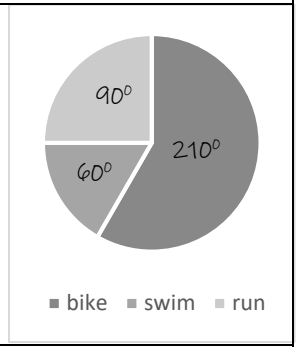
_____



The pie chart shows the strongest discipline of all 72 triathletes in the world championships

How many triathletes claimed that swimming was their strongest discipline?

_____



From the stem and leaf diagram below, what number is represented by the 6 in the star?

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

KEY: 1 \| 0 = 1.0

_____

From the stem and leaf diagram below, state the **range** of values

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

KEY 2 \| 2 = 22

_____

From the stem and leaf diagram below, calculate the **median** of the values

34	0 0 2 2 6 7 9
35	1 2 4 5 7 7
36	0 1 5 6 8 9
37	3 3 4 4 5 6 9
38	2 5 7 8

KEY: 34 \| 0 = 340

_____

Score ___ / 9

GCSE STATISTICS: TERM 10.3 MIXED TOPIC TASKS

Week 3.2

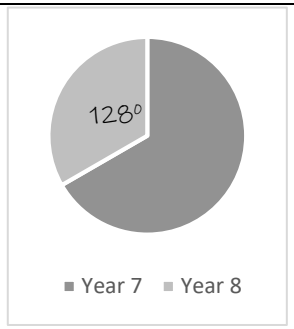
A pie chart is to be drawn for the following data to represent the numbers of pets sold by a pet shop in 2022

Calculate the angle to be drawn for each type of pet. You DO NOT need to draw the pie chart

Pet	Sales	Angle
Bird	8	
Hamster	20	
Rat	15	
Rabbit	34	

The pie chart shows information on the house points collected by year 7 and 8 students at Lovington High School.

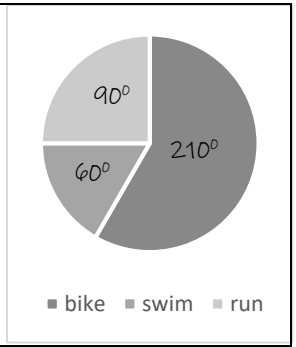
What proportion of house points were collected by year 7?



_____

The pie chart shows the strongest discipline of all 24 triathletes in the world championships

How many triathletes claimed that cycling was their strongest discipline?



_____

From the stem and leaf diagram below, what number is represented by the 1 in the star?

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

KEY: 1 | 0 = 10

_____

From the stem and leaf diagram below, state the **median** of values

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

KEY 2 | 2 = 2.2

_____

From the stem and leaf diagram below, calculate the **range** of the values

34	0 0 2 2 6 7 9
35	1 2 4 5 7 7
36	0 1 5 6 8 9
37	3 3 4 4 5 6 9
38	2 5 7 8

KEY: 34 | 0 = 3.40

_____

Complete the table for the Histogram data below

x	Frequency		
0 ≤ x < 0.5	8		
0.5 ≤ x < 1.5	4		
1.5 ≤ x < 3.0	12		
3.0 ≤ x < 5.0	9		
5.0 ≤ x < 7.5	5		
7.5 ≤ x < 10	7		

Complete the table for the Histogram data below

x	Frequency	Class width	Frequency Density
0 ≤ x < 50			2.5
50 ≤ x < 60			1.2
60 ≤ x < 70			2.7
70 ≤ x < 80			1.8
80 ≤ x < 100			2.2
100 ≤ x < 150			1.4

Complete the table for the Histogram data below

x	Frequency	Class width	Frequency Density
0 ≤ x < 10	20		
10 ≤ x < 12	16		
12 ≤ x < 14	17		
14 ≤ x < 16			7.5
16 ≤ x < 20			5.25
20 ≤ x < 50			0.5

Score ___ / 9

GCSE STATISTICS: TERM 10.3 MIXED TOPIC TASKS

Week 4.1

From the stem and leaf diagram below, what number is represented by the 4 in the star?

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

KEY: 1 | 0 = 1.0

_____

From the stem and leaf diagram below, state the **mode** of values

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

KEY 2 | 2 = 22

_____

From the stem and leaf diagram below, calculate the **median** of the values

34	0 0 2 2 6 7 9
35	1 2 4 5 7 7
36	0 1 5 6 8 9
37	3 3 4 4 5 6 9
38	2 5 7 8

KEY: 34 | 0 = 34.0

_____

Complete the table for the Histogram data below

x	Frequency		
0 ≤ x < 50	84		
50 ≤ x < 60	75		
60 ≤ x < 70	80		
70 ≤ x < 80	71		
80 ≤ x < 100	65		
100 ≤ x < 150	59		

Complete the table for the Histogram data below

x	Frequency	Class width	Frequency Density
0 ≤ x < 20			4.1
20 ≤ x < 40			4.6
40 ≤ x < 60			3.5
60 ≤ x < 80			3.0
80 ≤ x < 100			2.2
100 ≤ x < 200			2.5

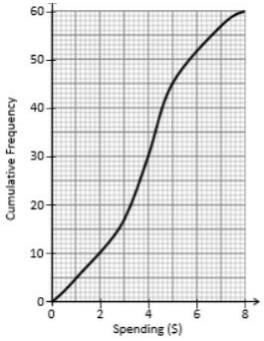
Complete the table for the Histogram data below

x	Frequency	Class width	Frequency Density
0 ≤ x < 1.0	5		
1.0 ≤ x < 1.2	8		
1.2 ≤ x < 1.4	6		
1.4 ≤ x < 1.6			35
1.6 ≤ x < 2.0			30
2.0 ≤ x < 5.0			12

Complete the cumulative frequencies for the data below

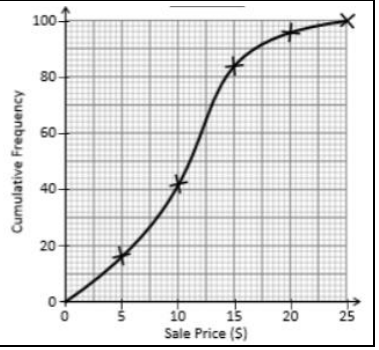
x	Frequency	Cumulative Frequency
0 ≤ x < 10	18	
10 ≤ x < 20	16	
20 ≤ x < 30	12	
30 ≤ x < 40	20	
40 ≤ x < 50	14	
50 ≤ x < 60	20	

Estimate the median from the cumulative frequency polygon



_____

Estimate the inter quartile range from the cumulative frequency polygon



_____

Score ___ / 9

GCSE STATISTICS: TERM 10.3 MIXED TOPIC TASKS

Week 4.2

Complete the table for the Histogram data below

x	Frequency		
$0 \le x < 5$	16		
$5 \le x < 10$	14		
$10 \le x < 20$	20		
$20 \le x < 30$	22		
$30 \le x < 50$	18		
$50 \le x < 100$	20		

Complete the table for the Histogram data below

x	Frequency	Class width	Frequency Density
$0 \le x < 0.5$			14
$0.5 \le x < 1.0$			12
$1.0 \le x < 1.5$			14
$1.5 \le x < 2.0$			20
$2.0 \le x < 5.0$			3.333
$5.0 \le x < 10.0$			4.2

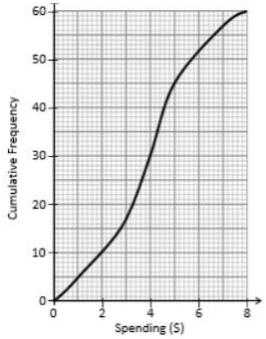
Complete the table for the Histogram data below

x	Frequency	Class width	Frequency Density
$0 \le x < 10$	5		
$10 \le x < 12$	8		
$12 \le x < 14$	2		
$14 \le x < 16$			2
$16 \le x < 20$			5
$20 \le x < 50$			0.8

Complete the cumulative frequencies for the data below

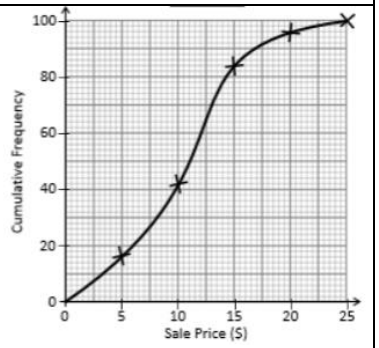
x	Frequency	Cumulative Frequency
$0 \le x < 2$	8	
$2 \le x < 4$	7	
$4 \le x < 6$	14	
$6 \le x < 8$	12	
$8 \le x < 10$	15	
$10 \le x < 12$	3	

Estimate the lower quartile from the cumulative frequency polygon



_____

Estimate median From the cumulative frequency polygon

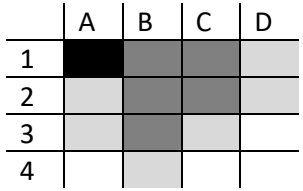


_____

True or False?

When reading from a choropleth map, the darker the shaded area, the more people there are in that area

Looking at the choropleth map, which area has the highest concentration of bacteria?



_____

Complete the choropleth map below using the information provided

	A	B	C	D
1	8	4	5	7
2	3	5	6	9
3	7	12	15	11
4	10	14	17	16

	A	B	C	D
1				
2				
3				
4				

Key	0-4		5-9		10-14		15-19	

Score ___ / 9

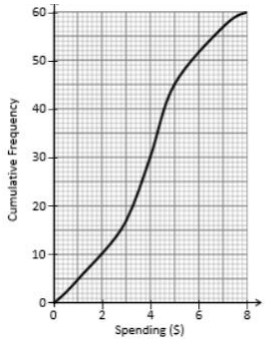
GCSE STATISTICS: TERM 10.3 MIXED TOPIC TASKS

Week 5.1

Complete the cumulative frequencies for the data below

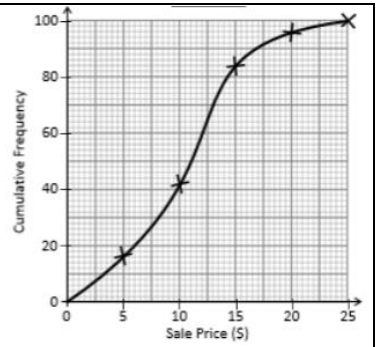
x	Frequency	Cumulative Frequency
$0 \leq x < 20$	124	
$20 \leq x < 40$	107	
$40 \leq x < 60$	56	
$60 \leq x < 80$	82	
$80 \leq x < 100$	73	
$100 \leq x < 120$	109	

Estimate the upper quartile from the cumulative frequency polygon



_____

Estimate the upper quartile from the cumulative frequency polygon



_____

True or False?

Choropleth maps are widely used in Geography

Looking at the choropleth map, which area has the most people sat in it?

	A	B	C	D
1				
2				
3				
4				

_____

Complete the choropleth map below using the information provided

	A	B	C	D
1	4	5	6	4
2	8	9	10	12
3	3	2	5	8
4	2	0	2	1

	A	B	C	D
1				
2				
3				
4				

Key	0-4		5-9		10-14		15-19	

From the two way table below, state the number of people who were wearing both a hat and scarf

	Hat	No Hat	Total
Scarf	22	14	36
No Scarf	17	4	21
Total	39	28	57

_____

Complete the missing values from the two way table below for the 320 students

	below	at	Above	Total
KS3	12			114
KS4		60	37	122
KS5	8	49		
Total		163		

Draw a two way table to represent the information given below:
There are 60 students in 2 classes. There are 31 students in Class 1. The students are asked to choose between food and textiles. 44 students choose food. 17 students in Class 2 choose food.

Score ___ / 9

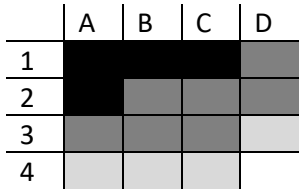
GCSE STATISTICS: TERM 10.3 MIXED TOPIC TASKS

Week 5.2

True or false?

Choropleth maps can show the number of people living in different areas of the UK

Looking at the choropleth map, which area has the fewest visitors?



	A	B	C	D
1				
2				
3				
4				

_____

Complete the choropleth map below using the information provided

	A	B	C	D
1	18	17	18	14
2	12	15	16	18
3	10	11	17	15
4	4	6	12	11

	A	B	C	D
1				
2				
3				
4				

Key	0-4		5-9		10-14		15-19	

From the two way table below, state the number of people who were wearing either a hat or scarf but not both

	Hat	No Hat	Total
Scarf	22	14	36
No Scarf	17	4	21
Total	39	28	57

_____

Complete the missing values from the two way table below for the 550 students

	below	at	Above	Total
KS3		114	74	250
KS4		82	57	
KS5	12			120
Total		277		

Draw a two way table to represent the information given below:
There are 80 people. There are 35 children and the others are adults. 58 of the people are right-handed. 6 of the adults are left-handed.

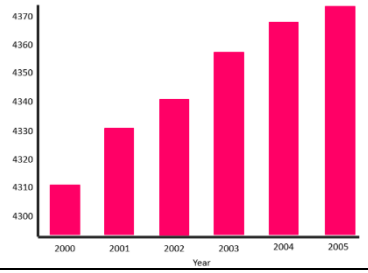
Look at the graph presented below, state 2 things that may be misleading

1. _____

_____

2. _____

_____



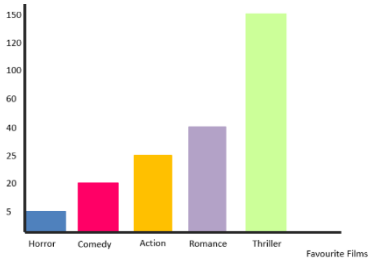
Look at the graph presented below, state 2 things that may be misleading

1. _____

_____

2. _____

_____



When looking at a 3D graph, why might this be considered to be misleading?

Score ___ / 9

GCSE STATISTICS: TERM 10.3 MIXED TOPIC TASKS

Week 6.1

A tally chart has been completed ***incorrectly*** for the information shown below. Highlight the error(s)

Blue, Red, Blue, Red, Blue, Red, Blue, Green, Blue, Blue, Green, Red, Yellow, Blue, Green, Blue, Blue, Red, Green

Chocolate	Tally	Frequency
Red	|||||	5
Yellow	|	1
Blue	||||| ||||	9
Green	||||	4

A pie chart is to be drawn for the following data to represent the numbers of pets sold by a pet shop in 2022

Calculate the angle to be drawn for each type of pet. You DO NOT need to draw the pie chart

Pet	Sales	Angle
Reptile	12	
Mammal	28	
Insect	14	
Bird	9	

Complete the cumulative frequencies for the data below

x	Frequency	Cumulative Frequency
$0 \leq x < 0.2$	14	
$0.2 \leq x < 0.4$	18	
$0.4 \leq x < 0.6$	15	
$0.6 \leq x < 0.8$	12	
$0.8 \leq x < 1.0$	14	
$1.0 \leq x < 1.2$	15	

From the pictogram shown below answer the corresponding question

Colour	KEY = 3 flags
Red	
Yellow	
Blue	

How many yellow flags were seen? ____

From the stem and leaf diagram below, what number is represented by the 1 in the star?

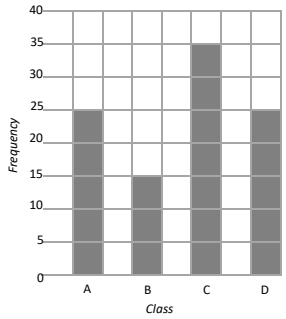
1	0 0 2 3 6 8 8 9
2	2 5 5 6 7 7
3	4 5 5 6 8 9 9
4	0 1 4 4 7 8
5	1 1 1 3 4 5 8 8 8 9

KEY: 1 \| 0 = 0.10

_____

True or False?

Choropleth maps can only eb correctly read from when using a grey scale



The bar chart shows the number of points scored by each class in January

From the bar chart shown answer the following:

Which class scored the least points in January?

_____

Complete the table for the Histogram data below

x	Frequency		
$0 \leq x < 0.5$	8		
$0.5 \leq x < 1.5$	12		
$1.5 \leq x < 3.0$	16		
$3.0 \leq x < 5.0$	10		
$5.0 \leq x < 7.5$	8		
$7.5 \leq x < 10$	4		

From the two way table below, state how many more people wore both a hat and scarf compared to nothing at all

	Hat	No Hat	Total
Scarf	22	14	36
No Scarf	17	4	21
Total	39	28	57

_____

Score ___ / 9

GCSE STATISTICS: TERM 10.3 MIXED TOPIC TASKS

Week 6.2

From the pictogram shown below answer the corresponding question

Subject	KEY = 4 students
Maths	
English	
Art	

How many more students chose Maths than English? ___

From the stem and leaf diagram below, calculate the IQR of the values

34	0 0 2 2 6 7 9
35	1 2 4 5 7 7
36	0 1 5 6 8 9
37	3 3 4 4 5 6 9
38	2 5 7 8

KEY: 34 | 0 = 340

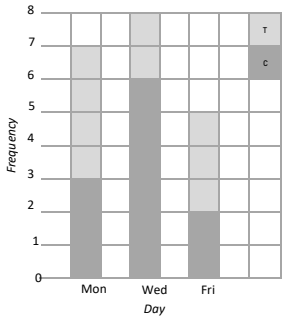
_____

Complete the choropleth map below using the information provided

	A	B	C	D
1	2	8	5	4
2	6	12	10	9
3	7	15	14	10
4	10	11	13	7

	A	B	C	D
1				
2				
3				
4				

Key	0-4		5-9		10-14		15-19	



The composite bar chart shows the number of tea & coffee's drunk by staff

From the bar chart shown answer the following:

On which days did teachers drink more tea than coffee?

_____

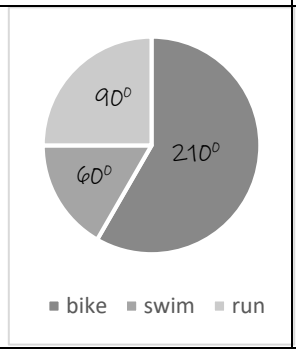
Complete the table for the Histogram data below

x	Frequency	Class width	Frequency Density
$0 \le x < 5$	7		
$5 \le x < 6$	8		
$6 \le x < 7$	10		
$7 \le x < 8$			9
$8 \le x < 10$			5.5
$10 \le x < 12$			7

Draw a two way table to represent the information given below:
There are 80 customers in a restaurant. The restaurant serves pasta or pizza. There are 55 adults and the rest are children. 38 customers choose pizza. 18 children choose pasta.

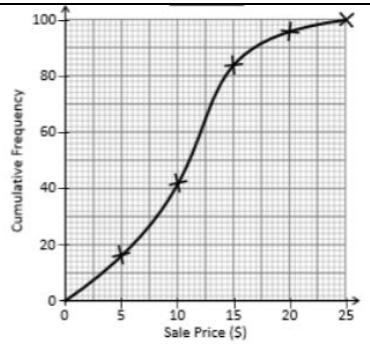
The pie chart shows the strongest discipline of all 180 triathletes in the world championships
How many triathletes claimed that swimming was their strongest discipline?

_____



Estimate the Median from the cumulative frequency polygon

_____



When looking at a graph that does not start at zero, why might this be considered misleading?

Score ___ / 9