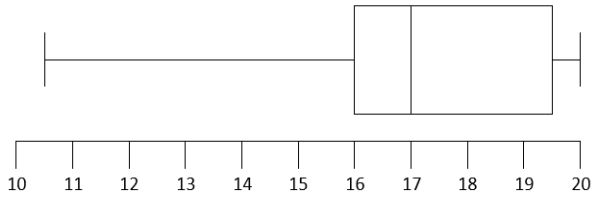
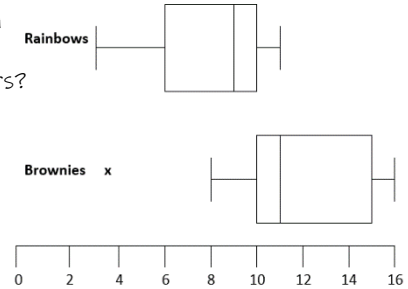
GCSE STATISTICS: TERM 10.5 MIXED TOPIC TASKS

Week 1.1

From the box plot below, state the IQR 3.5



Which group had a wider range of number of members?

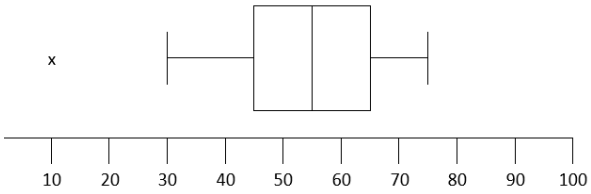


Neither

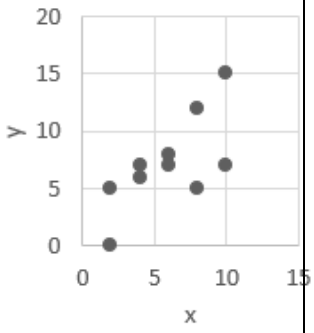
Give one example of where extrapolation would not work

Estimating the size of someone's foot based on their age over the age of 20

State the value of the outlier on the box plot below 10



What correlation can be seen on this scatter graph?



Positive

What is meant by a PMCC value of -0.524?

Moderate negative correlation

As the values on the x axis increase, the values on the y axis will decrease

Identify the skew shown on the box plot below

Positive

The equation below shows the line of best fit between the cost of an ice cream sundae with different numbers of toppings (x). $y = 2.74 + 0.85x$

What is meant by the value of 2.74 in this equation?

2.74 = y-intercept
2.74 is the average cost of an ice cream with 0 toppings

Calculate the value of the SRCC

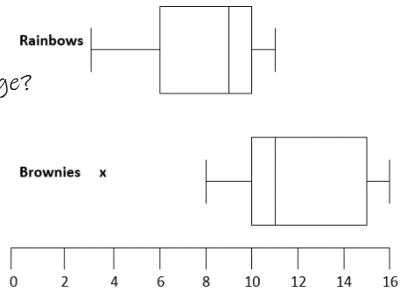
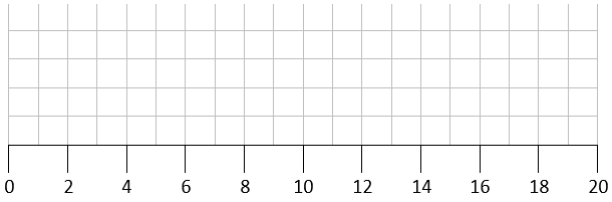
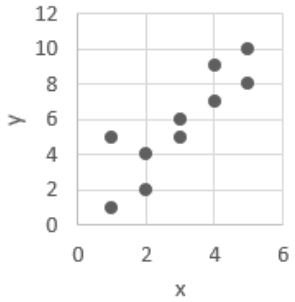
A	3	5	8	6	4	5	8	1	9
B	22	24	27	25	19	26	23	28	18

-0.252

Score ___ / 9

GCSE STATISTICS: TERM 10.5 MIXED TOPIC TASKS

Week 1.2

True or False? Estimates can never be taken using extrapolation FALSE	Which group had a higher number of members on average?  Brownies	Plot the following data on a box plot below 5, 8, 11, 17, 15, 2, 15, 7, 6, 10, 19, 10, 16, 8, 4 Q0: 2 Q1: 6 Q2: 10 Q3: 15 Q4: 19 
What is meant by a PMCC value of +0.27? Weak positive correlation As the number on the x variable increases, the value on the y axis also increases	What correlation can be seen on this scatter graph?  Positive	Show that there are two outlier in the following data set 77, 51.4, 82, 91.6, 87, 98, 59, 81.4, 76, 119, 85, 91 91.3 + (1.5 X 14.8) = 113.5 < 119 outlier 76.5 – (1.5 X 14.8) = 54.3 no lower outliers
What does $\sum d^2$ mean in the formula for SRCC? The sum of (the differences in the ranks squared)	The equation below shows the line of best fit between the cost of an ice cream sundae with different numbers of toppings (x). **y = 1.14x + 4.55** What is meant by the value of 1.14 in this equation? 1.14 = gradient For every extra topping, the average cost will increase by 1.14	Calculate the skew of the data represented by the information below mean: 84.5 median: 80.2 standard deviation: 3.64 3.544

Score ___ / 9

GCSE STATISTICS: TERM 10.5 MIXED TOPIC TASKS

Week 2.1

True or False? The following data can be plotted on a time series graph The amount of sunshine recoded each day for a month in Newquay and Glasgow True	For the time series graoh to the right, complete the 2 sentances The peak for each year is in Q3 The trough for each year is in Q1	
True or False? The following data can be plotted on a time series graph The number of detentions achieved by students in classes 10A and 10B False (unless we have the data per day/week/term/etc)	For the time series graoh to the right, complete the 2 sentances The peak for each year is in Q2 The trough for each year is in Q4	
True or False? The following data can be plotted on a time series graph The proportion of employees who have been in work every day for a week False	For the time series graoh to the right, complete the 2 sentances The peak for each year is in Q3 The trough for each year is in Q1	

Score ___ / 9

GCSE STATISTICS: TERM 10.5 MIXED TOPIC TASKS

Week 2.2

True or False?

The following data can be plotted on a time series graph

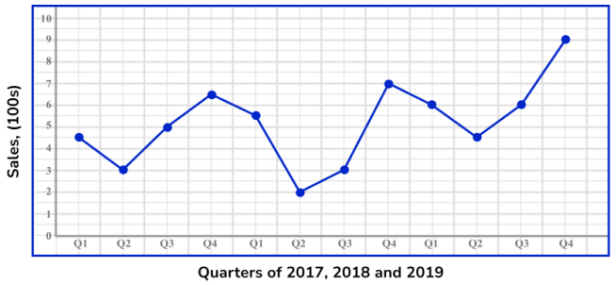
The profit earned by a company each month for a year

True

For the time series graoh to the right, complete the 2 sentances

The peak for each year is in Q4

The trough for each year is in Q2



True or False?

The following data can be plotted on a time series graph

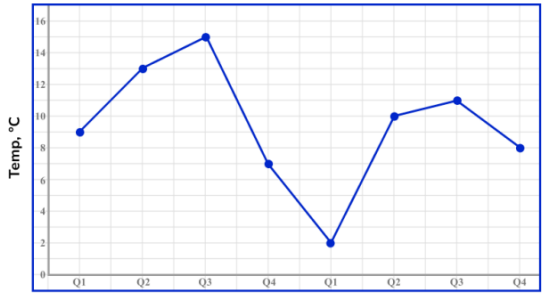
The absence data for woman with children compared to women without

False (unless the data is for every day/week/year /etc)

For the time series graoh to the right, complete the 2 sentances

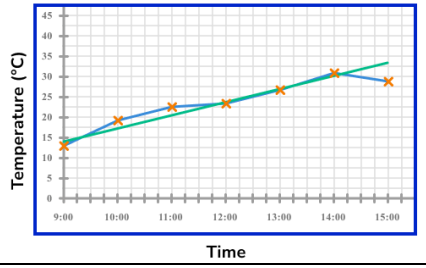
The peak for each year is in Q3

The trough for each year is in Q1



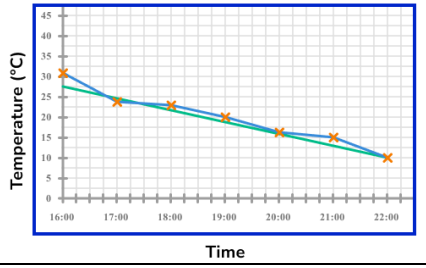
State the trend show by the time series graph

Rising/increasing/upwards



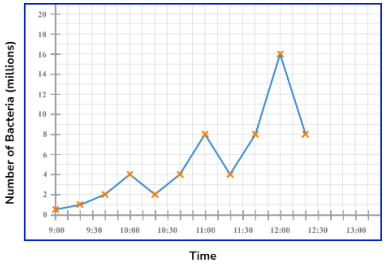
State the trend show by the time series graph

Falling/decreasing/downwards



State the trend show by the time series graph

Rising/increasing/upwards



Score ___ / 9

GCSE STATISTICS: TERM 10.5 MIXED TOPIC TASKS

Week 3.1

True or False?

The following data can be plotted on a time series graph

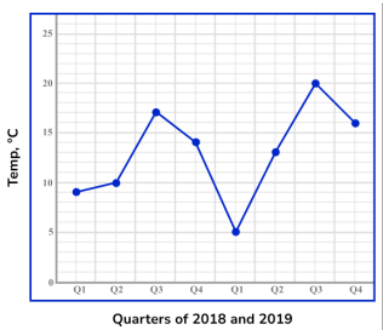
The number of phone calls received each hour during the working day

True

For the time series graoh to the right, complete the 2 sentances

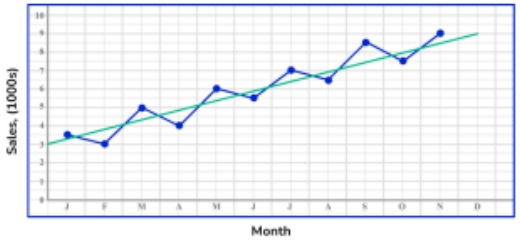
The peak for each year is in Q3

The trough for each year is in Q1



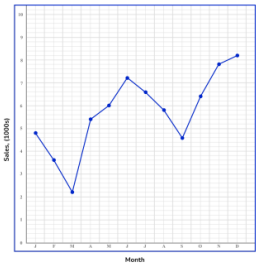
State the trend show by the time series graph

Rising/increasing/upwards



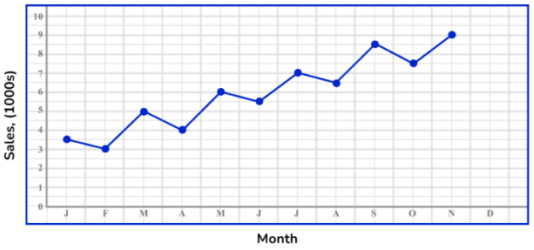
State the trend show by the time series graph

Rising/increasing/upwards



State the trend show by the time series graph

Rising/increasing/upwards



For the data below, state the appropriate moving average that should be used:

Q	1	2	3	4	1	2	3	4	1
£	29	13	18	20	24	12	15	19	20

We should use a 4 - point moving average

For the data below, state the appropriate moving average that should be used:

day	M	T	W	Th	F	M	T	W	Th
f	2	3	7	8	11	2	5	9	10

We should use a 5 - point moving average

For the data below, state the appropriate moving average that should be used:

Month	Jan	Jun	Jan	Jun	Jan	Jun	Jan
%	56	84	61	88	60	90	65

We should use a 2 - point moving average

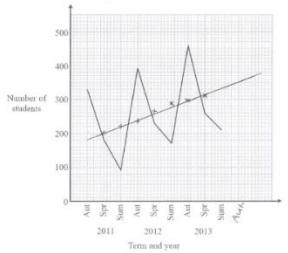
Score ___ / 9

GCSE STATISTICS: TERM 10.5 MIXED TOPIC TASKS

Week 3.2

State the trend show by the time series graph

Rising/increasing/upwards



For the data below, state the appropriate moving average that should be used:

day	Sat	Sun	Sat	Sun	Sat	Sun	Sat
f	2	3	2	4	2	5	3

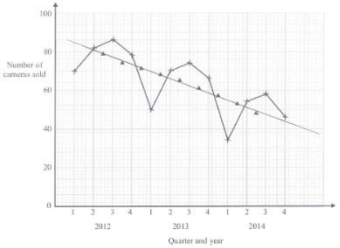
We should use a 2 - point moving average

Calculate the missing moving average for this data

Q	1	2	3	4	1	2	3	4
£	261	353	372	290	193	309	292	202
MA			319	302	291	271	249		

State the trend show by the time series graph

Falling/decreasing/downwards



For the data below, state the appropriate moving average that should be used:

Q	2	3	4	1	2	3	4	1	2
$	12	15	10	7	12	14	10	6	11

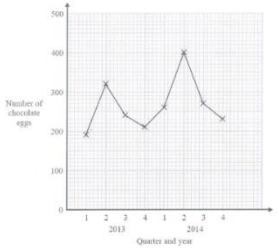
We should use a 4 - point moving average

Calculate the missing moving average for this data

Month	Jan	May	Sep	Jan	May	Sep	Jan
%	54	41	80	52	35	74	41
MA		58.3	57.7	55.7	53.7	50	

State the trend show by the time series graph

Rising/increasing/upwards



For the data below, state the appropriate moving average that should be used:

Month	Jan	Apr	Jul	Oct	Jan	Apr	Jul
y	94	92	81	90	96	95	87

We should use a 4 - point moving average

Calculate the missing moving average for this data

day	Sa	Su	Sa	Su	Sa	Su	Sa	Su
F	2	8	3	8	3	10	4	11
MA		5	5.5	5.5	5.5	6.5	7	7.5	

Score ___ / 9

GCSE STATISTICS: TERM 10.5 MIXED TOPIC TASKS

Week 4.1

For the data below, state the appropriate moving average that should be used:

Q	3	4	1	2	3	4	1	2	3
$	1.2	1.8	1.3	1.9	1.4	2.1	1.5	2.5	1.8

We should use a 4 - point moving average

For the data below, state the appropriate moving average that should be used:

Day	Mon	Wed	Fri	Mon	Wed	Fri	Mon
f	56	51	23	47	26	59	40

We should use a 3 - point moving average

For the data below, state the appropriate moving average that should be used:

Month	Feb	Aug	Feb	Aug	Feb	Aug	Feb
%	25	30	22	30	18	24	15

We should use a 2 - point moving average

Calculate the missing moving average for this data

Month	Jan	May	Sep	Jan	May	Sep	Jan	May
f	12	15	20	13	16	20	15	19
MA		13.5	16	16.5	14.5	18	17.5	17	

Calculate the missing moving average for this data

Day	M	T	W	Th	F	M	T
£	20	22	23	29	14	21	25
MA			21.6	21.8	22.4		

Calculate the missing moving average for this data

Q	1	2	3	4	1	2	3	4
$	150	162	185	109	145	157	190	103
MA			151.5	150.25	149	150.25	148.75		

State the gradient of the trend line with equation:

$y = 14.8 + 8.2x$

8.2

State the gradient of the trend line with equation:

$32.7x - 2.9 = y$

32.7

State the gradient of the trend line with equation:

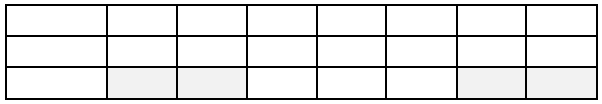
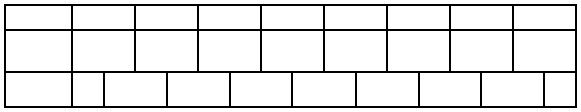
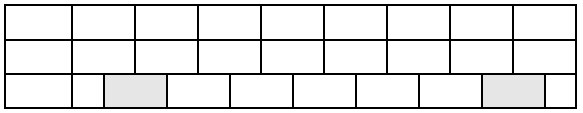
$2y = 15.3 - 74x$

-37

Score ___ / 9

GCSE STATISTICS: TERM 10.5 MIXED TOPIC TASKS

Week 4.2

Calculate the missing moving average for this data 	Calculate the missing moving average for this data 	Calculate the missing moving average for this data 
State the gradient of the trend line with equation: $y = 4.6x - 12$ 4.6	State the gradient of the trend line with equation: $y = 22.7 - 0.8x$ -0.8	State the gradient of the trend line with equation: $15.3x - 12.7 = 3y$ 5.1
For a trend line drawn on a graph representing the sales figures (£ 000's) for a company per quarter, what does a gradient of 12.5 represent? For every quarter, the sales figures increase by an average of £12.5 thousand	For a trend line drawn on a graph representing the number of visitors (hundreds) per day to a museum, what does a gradient of 22 represent? Every day, the average number of visitors increases by 2200	For a trend line drawn on a graph representing the number of ice creams sold each moth by Mr Whippy, what does a gradient of -14.75 represent? Every month, the average number of ice creams sold decreases by 14.75

Score ___ / 9

GCSE STATISTICS: TERM 10.5 MIXED TOPIC TASKS

Week 5.1

State the gradient of the trend line with equation: $y = 22.9 - 3.75x$ -3.75	State the gradient of the trend line with equation: $125.9x + 15.3 = y$ 125.9	State the gradient of the trend line with equation: $2y = 23.9x + 15200$ 11.95
For a trend line drawn on a graph representing the number of people (thousands) who attend a concert each night, what does a gradient of 0.83 represent? For every might, the average number of people attending the concert increases by 830	For a trend line drawn on a graph representing the amount of money people spend each month ($) in an office on coffee, what does a gradient of -1.06 represent? Each month, the amount of money they spend on coffee decreases by $1.06	For a trend line drawn on a graph representing the number of fish (00's) estimated to be in the local pond each year, what does a gradient of -4.9 represent? Every year, the number of fish decreases by an average of 490
Jenny draws a trend line an reads that the number of visitors is 22500 for 2015 Q2 Jenny plotted that for 2015 Q2 there was 21800 visitors Calculate the seasonal effect for 2015 Q2 -700	State the formula for finding seasonal effect Observed Value - Trend Line Value	It is plotted on the time series graph that Monday Week 1 has a value of £215 The value from the trend line for Monday Week 1 reads as £190 Calculate the seasonal effect for Monday Week 1 25

Score ___ / 9

GCSE STATISTICS: TERM 10.5 MIXED TOPIC TASKS

Week 5.2

For a trend line drawn on a graph representing the total expenditure (£ thousands) per term by the school, what does a gradient of 13.5 represent? Every term, the average expenditure of the school increases by £13.5 thousand	For a trend line drawn on a graph representing the number of patients admitted via A&E each day, what does a gradient of -13.7 represent? Each day, the average number of patients admitted via A&E decreases by 13.7	For a trend line drawn on a graph representing the profit (£ 000's) made by a local business each year, what does a gradient of 7.5 represent? Every year, the average profit made by local businesses increases by £7.5 thousand
A time series is plotted and a value of 13.9 is recorded for Monday Week 4 The trend line value is also read for Monday Week 4 and the value 11.3 is found. Calculate the seasonal effect for Monday week 4 2.6	State the formula for finding seasonal effect Observed Value - Trend Line Value	Izaak reads his trends line value for Q4 2019 as £25.40 Izaak plotted Q4 2019 on the time series at £14.60 Calculate the seasonal effect for Q4 2019 -£10.80
Interpret the mean seasonal effect for 2pm which was calculated as 34 000 calls On average, the values plotted at 2pm are 34000 higher than the value read from the trend line	Interpret the mean seasonal effect for Q1 which was calculated as -£250 On average, the values plotted for Q1 are £250 lower than the value read from the trend line	Interpret the mean seasonal effect for Friday which was calculated as 5500 visitors On average, the values plotted for Friday are 5500 higher than the value read from the trend line

Score ___ / 9

GCSE STATISTICS: TERM 10.5 MIXED TOPIC TASKS

Week 6.1

True or False?

The following data can be plotted on a time series graph

The number of visitors each month at 2 different museums

True

For the data below, state the appropriate moving average that should be used:

Time	12am	12pm	12am	12pm	12am	12pm
Hits	34	49	38	51	40	58

We should use a 2 - point moving average

For a trend line drawn on a graph representing the number of sheep recorded in a field each month, what does a gradient of 15.3 represent?

Every month, the number of sheep recorded increases by an average of 15.3

State the formula for fining seasonal effect

Observed Value - Trend Line Value

Calculate the missing moving average for this data

Day	Mon	Wed	Fri	Mon	Wed	Fri	Mon	Wed
f	26	15	20	29	18	22	31	20
MA		20.3	21.3	22.3	23	23.7	24.3	

A time series is plotted and a value of 74 600 is plotted for 6pm

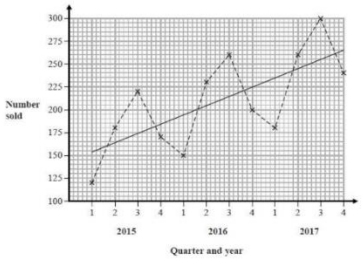
The value on the trend line at 6pm is read at 86 300

Calculate the seasonal effect at 6pm

-11 700

State the trend show by the time series graph

Rising/upwards/increasing



State the gradient of the trend line with equation:

$33.6 - 218x = y$

-218

Interpret the mean seasonal effect for Q2 which was calculated as -$260

On average, the values plotted for Q2 are $260 lower than the values read from the trend line

Score ___ / 9

GCSE STATISTICS: TERM 10.5 MIXED TOPIC TASKS

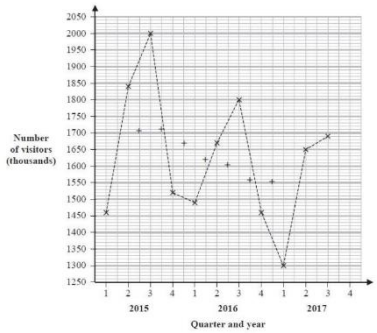
Week 6.2

For the data below, state the appropriate moving average that should be used:

Month	Jan	Feb	Mar	Apr	May	Jun
£	550	684	214	289	305	420

We should use a 12 - point moving average

For the time series graoh to the right, complete the 2 sentances



The peak for each year is in Q3

The trough for each year is in Q1

Calculate the missing moving average for this data

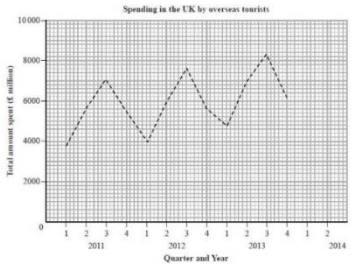
Time	9am	12pm	3pm	9am	12pm	3pm	9am	12pm
f	0.5	0.2	0.8	0.6	0.1	0.4	0.9	0.3
MA		0.5	0.53	0.5	0.37	0.47	0.53	

For a trend line drawn on a graph representing the number of sales per quarter, what does a gradient of -2500 represent?

Each quarter, the sales reduce by an average of 2500

State the trend show by the time series graph

Rising/upwards/increasing



State the gradient of the trend line with equation:

$y = 156.3x + 22.7$

156.3

Phyliss drew a time series with a trend line. From the trend line the value on Friday Week 1 reads as 13.5

Phyliss had plotted a value on the time series for Friday Week 1 as 10.7

Calculate the seasonal effect for Friday Week 1

2.8

Interpret the mean seasonal effect for 5pm which was calculated to be -200 visitors.

On average, the values plotted for 5pm at 200 visitors lower than the values read from the trend line

Score ___ / 9