

<p>What is the mode of a data set?</p>	<p>In grouped data, what is the modal class?</p>
<p>The most common data value</p>	<p>The most common interval of data</p>
<p>What is the median of a data set?</p>	<p>How do you find the median when there is an even number of values?</p>
<p>The middle value when all the values are arranged in order of size.</p> <p>For n data values this will be the $\frac{(n+1)}{2}$th value.</p>	<p>For n data values the median is the $\frac{(n+1)}{2}$th value.</p> <p>If n is even this will be the mean of the two middle numbers.</p>
<p>How do you calculate the geometric mean of two numbers: a and b?</p>	<p>How do you calculate the geometric mean of three numbers: a, b and c?</p>
<p>Square root the product of a and b:</p> \sqrt{ab}	<p>Cube root the product of a, b and c:</p> $\sqrt[3]{abc}$
<p>How is the (arithmetic) mean of a data set calculated?</p>	<p>What is the range of a data set?</p>
<p>Find the total of all the data values then divide by the number of values</p>	<p>The difference between the largest and smallest value</p>

<p>Name two measures of central tendency or location.</p>	<p>Name two measures of spread.</p>
<p>Mean Median Mode</p>	<p>Range Interquartile range Standard deviation</p>
<p>Give an advantage of using the mean over the median or mode.</p>	<p>When asked to find the mean height of adult women, Natasha asked her 10 aunts. Why was this a bad idea?</p>
<p>Takes all the data values into account, including extreme values</p>	<p>Sample size is too small Biased results as they are all from the same family</p>
<p>When using grouped data, why is the mean only an estimate?</p>	<p>What are deciles?</p>
<p>Midpoint of intervals are used, rather than each individual value</p>	<p>The nine values which divide an ordered set of data into 10 equal parts. The median is also the fifth decile.</p>
<p>What are sextiles?</p>	<p>What are percentiles?</p>
<p>The five values which divide an ordered set of data into six equal parts. The median is also the third sextile.</p>	<p>The 99 values which divide an ordered set of data into 100 equal parts. The median is also the fiftieth percentile.</p>

<p>What is the lower quartile?</p>	<p>What is the upper quartile?</p>
<p>The value one quarter of the way through the data set.</p> <p>For n values, the lower quartile is the $\frac{(n+1)}{4}$th value.</p>	<p>The value three quarters of the way through the data set.</p> <p>For n values, the lower quartile is the $\frac{3(n+1)}{4}$th value.</p>
<p>What is the interquartile range?</p>	<p>What is the semi interquartile range?</p>
<p>The difference between the upper and lower quartiles (useful as it ignores extreme values)</p>	<p>Half the difference between the upper and lower quartiles (half the interquartile range)</p>
<p>What is an outlier?</p>	<p>What is cumulative frequency?</p>
<p>Any value which is more than 1.5 times the interquartile range above the upper quartile or below the lower quartile</p>	<p>A running total of all the frequencies in grouped data</p>
<p>What kind of moving average would you use for quarterly bills?</p>	<p>What kind of moving average would you use to monitor weekly spend on school meals?</p>
<p>Four point</p> <p>Irons out the seasonal variation over a year</p>	<p>Five point</p> <p>Irons out daily variation over the week</p>

<p>What are the upper and lower bounds of 40.0cm to the nearest mm?</p>	<p>How do you calculate a standardised score?</p>
<p>Upper bound = 40.05cm or 400.5mm Lower bound = 39.95cm or 399.5mm</p>	$\frac{\text{score} - \text{mean}}{\text{standard deviation}}$ <p>Indicates how many standard deviations the score is away from the mean</p>
<p>How do you calculate relative error?</p>	<p>How do you calculate percentage relative error?</p>
$\frac{\text{error}}{\text{exact value}}$ <p>Indicates the accuracy of a measurement in relation to the size of the item being measured</p>	$\frac{\text{error}}{\text{exact value}} \times 100$
<p>What does a Price Relative index show?</p>	<p>What are chain base numbers?</p>
<p>How the price of something changes over a period of time</p> <p>e.g. If the price index is 150, the value has increased by 50% from the base year.</p>	<p>Index numbers which show how values change from year to year, using the previous year's index as the base to calculate the present year's index</p>
<p>How do you calculate a weighted index number?</p>	<p>In quality assurance, what should you do if all your products were above the required average size?</p>
$\frac{\sum(\text{index number} \times \text{weight})}{\sum \text{weights}}$ <p>Gives the index for a product made of many different elements</p>	<p>Adjust the machine to produce smaller products</p>

In a pond, 30 frogs were caught, marked and released. Later, 20 frogs were caught and 10 were marked. Estimate the number of frogs in the pond.

$$\frac{30}{n} = \frac{10}{20}$$

$$n = 60 \text{ frogs}$$

How do you calculate a crude birth rate?

$$\frac{\text{number of births}}{\text{total population}} \times 1000$$

(number of births per year per 1000 people)

How do you calculate a crude death rate?

$$\frac{\text{number of deaths}}{\text{total population}} \times 1000$$

(number of deaths per year per 1000 people)

How do you calculate a standardised rate?

$$\frac{\sum(\text{crude rate} \times \text{standard population})}{\sum \text{standard population}}$$

(standardised rates take age distribution into account)

What is the formula for calculating Spearman's rank correlation coefficient?

$$1 - \frac{6 \sum d^2}{n(n^2 - 1)}$$

d = differences in ranks
 n = total number of values

What does a Spearman's rank correlation coefficient close to zero show?

Little or no correlation between the two data sets

What does a Spearman's rank correlation coefficient close to one show?

Strong positive correlation between the two data sets

What is 5! (5 factorial)?

$$5! = 5 \times 4 \times 3 \times 2 \times 1 = 120$$

<p>How many different ways can 4 children stand in a line?</p>	<p>How many ways can you select r items from n total items?</p>
$4! = 4 \times 3 \times 2 \times 1 = 24$	${}^n C_r = \frac{n!}{(n-r)!r!}$
<p>What is the probability of r successes from n trials, where p is the probability of success?</p>	<p>In probability, what does it mean if two events are independent?</p>
${}^n C_r p^r (1-p)^{n-r}$	<p>The outcome of one event has no effect on the outcome of another</p>
<p>If two events, A and B, are independent, what is the probability they both occur?</p>	<p>In probability, what does it mean if two events are mutually exclusive?</p>
$P(A \text{ and } B) = P(A \cap B) = P(A) \times P(B)$	<p>The events cannot occur at the same time</p> <p>e.g. Getting a head or tail when tossing a coin</p>
<p>If two events, A and B, are mutually exclusive, what is the probability one of them occurs?</p>	<p>What is the probability that event A occurs, given that event B has occurred?</p>
$P(A \text{ or } B) = P(A \cup B) = P(A) + P(B)$	$P(A B) = \frac{P(A \cap B)}{P(B)}$