



# AS Statistics Statements

True? False? Or Sometimes True?

## Aims

- to help learners discuss & clarify common misconceptions occurring in AS module Statistics 1
- to give learners time for reflection

## Activity

In pairs:

- Take a card.
- Ensure that you understand exactly what it is saying
- Discuss and decide if the statement on the card is either
  - FALSE,
  - TRUE
  - or is
  - SOMETIMES TRUE under certain conditions or circumstances.

Stick the card onto a poster along with your written explanation of why you believe it to be true or false or if it is sometimes true then what conditions etc are needed for it to be true.

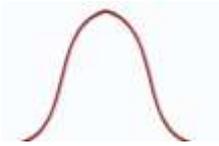
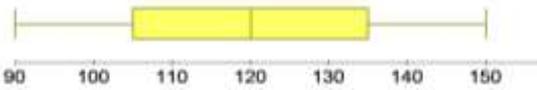
## Conclusion

Each pair will be asked to choose one particular card – say which category they have placed it in and why they believe it goes there.

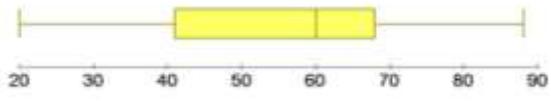
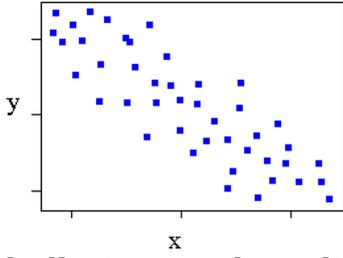


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Card Set – true, false or sometimes true

<p><b>A</b></p> <p><b>The normal distribution is always this shape.</b></p> 	<p><b>B</b></p> <p><b>In a Binomial distribution the probability of success is equal to 0.5</b></p>
<p><b>C</b></p> <p><b>The standard error of the mean is a measure of the variability of the mean values</b></p>	<p><b>D</b></p> <p><b>In a histogram the height of each bar is proportional to the frequency</b></p>
<p><b>E</b></p> <p><b>In a positively skewed distribution, the median value will be less than the mean value</b></p>	<p><b>F</b></p> <p><b>If the probability of event A is <math>x</math> and the probability of event B is <math>y</math> then the probability of event A or event B happening is <math>x+y</math></b></p>
<p><b>G</b></p> <p><b>In a normal distribution the amount of the distribution lying within 1 standard deviation of the mean is 50%</b></p>	<p><b>H</b></p> <p>Student weights in kg</p>  <p><b>The mean and median weight of these students are both about 120kg</b></p>

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<p><b>I</b></p> <p>Weight of apples in grams</p>  <p>The mean weight of the apples is about 60g</p>	<p><b>J</b></p> <p>If Mori decided to increase the size of it's random sample of voters from 1000 people to 5000 people the standard error of the estimate will increase</p>
<p><b>K</b></p> <p>In histograms all bars are of equal width</p>	<p><b>L</b></p> <p>A sampling distribution shows how a sample is distributed around the sample mean</p>
<p><b>M</b></p> <p>A large sample always gives unbiased estimates regardless of how the sample is chosen</p>	<p><b>N</b></p> <p>A 95% confidence interval for the sample mean of test scores is between 60 and 70. This means that the population mean lies between 59.6 and 70.4</p>
<p><b>O</b></p>  <p>This indicates weak positive correlation exists between x &amp; y</p>	<p><b>P</b></p> <p>Throwing a double six with a pair of dice is less likely than any other combination</p>