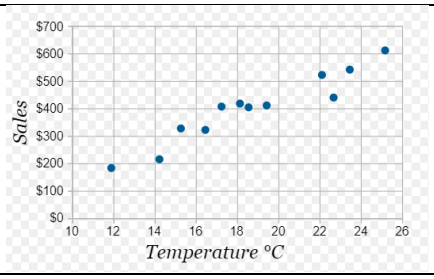
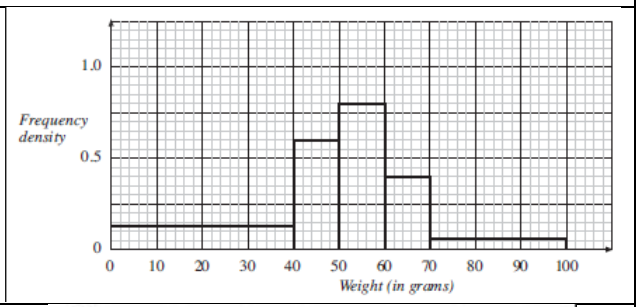
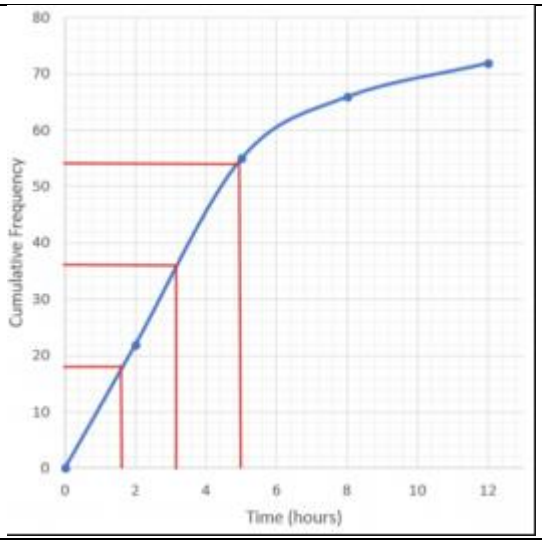
Year 11 – Module 8 Higher

Topic/Skill	Definition/Tips	Example
Estimate of the mean for grouped data	1) Find the midpoint of the interval 2) Multiply by frequency 3) Add 4) Divide by total frequency	<table><tr><th>Class Interval</th><th>Mid-point</th><th>Frequency</th><th>Mid-point × Frequency</th></tr><tr><td>$140 \le h < 150$</td><td>145</td><td>6</td><td>145 × 6 = 870</td></tr><tr><td>$150 \le h < 160$</td><td>155</td><td>16</td><td>155 × 16 = 2480</td></tr><tr><td>$160 \le h < 170$</td><td>165</td><td>21</td><td>165 × 21 = 3465</td></tr><tr><td>$170 \le h < 180$</td><td>175</td><td>8</td><td>175 × 8 = 1400</td></tr><tr><td></td><td>Totals</td><td>51</td><td>8215</td></tr></table> So 8215 ÷ 51 = 161.0784…
Modal class	Most common interval	For the example above this would be 160 ≤ h < 170
Scatter graph	Graph to show a relationship between two things. Points on the graph are not joined together.	
Correlation	If there is a relationship between the two things plotted on a scatter graph.	Positive – points are increasing as you move along the x axis Negative – points are decreasing as you more along the x axis
Line of best fit	Line to help estimate values from a scatter graph	Must be a straight line following the general trend of the points with roughly half the points above and half below.
Histogram	A way of displaying continuous data where the area of the bar represents the frequency of that interval. $Frequency\ density = \frac{Frequency}{Class\ width}$	
Cumulative frequency graphs	S shaped curve where the point on the x axis is the total frequency up to that point. The frequencies "accumulate". The data point is always plotted at the upper value of the interval. Median – half way along the y axis LQ $\frac{1}{4}$ of the way up the y axis UQ $\frac{3}{4}$ of the way up the y axis	

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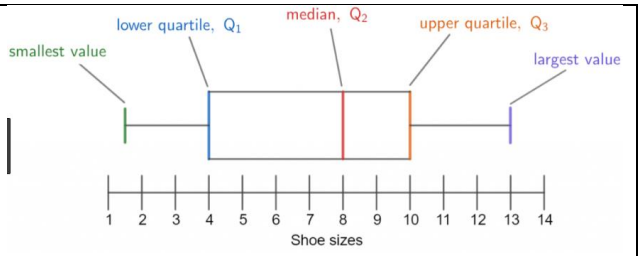
Box plots	Can be drawn from a cumulative frequency graph if the smallest and largest values are given. The box represent the middle 50% of the data. The whiskers show the upper and lower 25% of the data. Interpretation: Median: On average…. Box length: Group ___ were more consistent than _____	
Interquartile range	The range between the highest and lowest points in the middle 50% of the data.	IQR = UQ - LQ
Density	The amount of mass in a given volume	Density = $\frac{Mass}{Volume}$