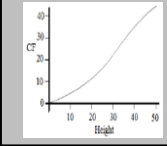
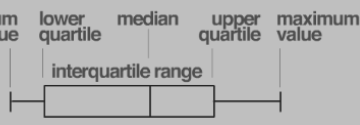


Year 10 Unit 1: Probability and Statistics

PROBABILITY	
probability	the likelihood or chance of something happening it is given on a scale between 0 (impossible) and 1 (certain) , and can be a fraction, decimal , or sometimes a percentage
theoretical probability	the probability of something in theory
relative frequency	the probability of something worked out from real life data , also called empirical probability
experiment (in probability)	when a number of trials are conducted to determine the probability of an event
event	one possible outcome in a probability experiment, <i>e.g. getting a 6 on a die</i>
expectation	what you predict will happen in a probability experiment, you multiply the probability by the number of trials

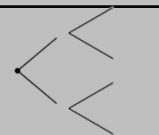
DISPLAYING GROUPED DATA	
cumulative frequency	a running total
cumulative frequency diagram	a curve plotting the end-points of grouped data against the running total makes an 'S' shape 
box plots	<p>minimum value lower quartile median upper quartile maximum value</p> 

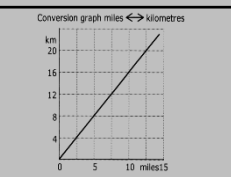
OUTCOMES / EVENTS	
exhaustive	outcomes are exhaustive if they cover the entire range of possible outcomes
mutually exclusive	events are mutually exclusive if they cannot happen at the same time
independent events	events where the outcome of an event is not affected by the outcome of a previous event
dependent events	events where the outcome of an event is affected by the outcome of a previous event
conditional probability	the probability of an event happening, given that another event has already happened

SPREAD OF DATA: QUARTILES	
lower quartile	the value one quarter of the way through the data
median	the middle value (half way through the data)
upper quartile	the value three quarters of the way through the data
interquartile range	a measure of spread calculated by: the upper quartile subtract the lower quartile

PROBABILITY NOTATION	
P(A) =	the probability of an event A =
P(A') =	the probability that event A will not occur = the complement of A
P(A ∩ B) =	the probability that both events A and B will occur = the intersection
P(A ∪ B) =	the probability that event A or B or both will occur = the union

AVERAGES AND RANGE FROM A FREQUENCY TABLE	
mean	method: multiply the variables by their frequencies (fx column), total the fx column, divide by total frequency
mode / modal class	the most frequent value or class; the one with the highest frequency
median	use half the total frequency to find the middle position , then locate the row this occurs in using the 'subtotal' column
range	difference between the largest and smallest values of the variable (first column)

REPRESENTING PROBABILITIES	
sample space	the set of all possible outcomes of an experiment
probability tree	a diagram shaped like a tree used to display a sample space by using one branch for each possible outcome 

REAL LIFE GRAPHS	
real life graph	a graph that mathematically models a real life situation
conversion graph	a line graph to convert one unit to another 
distance-time graphs	the gradient of the line is the speed
velocity-time graphs	the gradient of the line is the acceleration the area under the graph is the distance
gradient of a curve	the gradient of a curve at a point is the same as the gradient of the tangent at that point

Links to: LINEAR GRAPHS	
gradient	how steep a line is can be positive or negative (Change in y) (Change in x) it gives the rate of change 