

Year 13 Knowledge Organiser Statistics	
1. Regression, Correlation & Hypothesis Testing	
$y = kx^n$	$\log \log y = \log \log a + n(\log x)$, n =gradient, $\log a$ =constant
$y = ka^x$	$\log \log y = \log \log a + \log b(x)$, $\log b$ =gradient, $\log a$ =constant
The PMCC takes values between....	-1 and 1
2. Conditional Probability	
\cap	Intersection (both must happen)
\cup =	Union (either or both can happen)
A'	The complement of A (not A)
$P(B A)$	Probability of B given that A has already occurred
For independent events $P(A B)$ =	$P(A B') = P(A)$
For independent events $P(B A)$ =	$P(B A') = P(B)$
$P(A \cup B)$ =	$P(A) + P(B) - P(A \cap B)$
$P(B A)$ =	$\frac{P(A \cap B)}{P(A)}$
$P(A \cap B)$ =	$P(B A) \times P(A)$
3. The Normal Distribution	
The area under a continuous probability distribution is equal to...	1
Nomrally distributed random variable \bar{X}	$N(\mu, \sigma^2)$
The normal distribution has	<ul style="list-style-type: none"> Parameters μ, the population mean and σ^2, the population variance Is symmetrical (mean=median=mode) Has a bell shaped curve with asymptotes at each end Has total area under the curve equal to 1 Has points of inflection at $\mu + \sigma$ and $\mu - \sigma$
The standard normal distribution has mean=	0
The standard normal distribution has standard deviation=	1
Normal approximation for Binomial μ	np
Normal approximation for Binomial σ	$\sqrt{np(1-p)}$
Sample mean \bar{X}	$N(\mu, \frac{\sigma^2}{n})$
For $Z = \frac{\bar{X}-\mu}{\frac{\sigma}{\sqrt{n}}}$, Z	$N(0,1)$