Topics	What students need to learn:		
		Content	Guidance
5 **Statistical hypothesis testing**	5.1	**Understand and apply the language of statistical hypothesis testing, developed through a binomial model: null hypothesis, alternative hypothesis, significance level, test statistic, 1-tail test, 2-tail test, critical value, critical region, acceptance region, *p*-value;**	**An informal appreciation that the expected value of a binomial distribution is given by np may be required for a 2-tail test.**
		extend to correlation coefficients as measures of how close data points lie to a straight line.	Students should know that the product moment correlation coefficient r satisfies $\|r\| \le 1$ and that a value of $r = \pm 1$ means the data points all lie on a straight line.
		and	
		be able to interpret a given correlation coefficient using a given *p*-value or critical value (calculation of correlation coefficients is excluded).	Students will be expected to calculate a value of r using their calculator but use of the formula is not required. Hypotheses should be stated in terms of ρ with a null hypothesis of $\rho = 0$ where ρ represents the population correlation coefficient. Tables of critical values or a *p*-value will be given.

Topics	What students need to learn:		
	Content		Guidance
5 **Statistical hypothesis testing** *continued*	5.2	**Conduct a statistical hypothesis test for the proportion in the binomial distribution and interpret the results in context.**	
		Understand that a sample is being used to make an inference about the population. **and** **appreciate that the significance level is the probability of incorrectly rejecting the null hypothesis.**	**Hypotheses should be expressed in terms of the population parameter *p*** **A formal understanding of Type I errors is not expected.**
	5.3	Conduct a statistical hypothesis test for the mean of a Normal distribution with known, given or assumed variance and interpret the results in context.	Students should know that: If $X \sim \mathrm{N}(\mu,\ \sigma^2)$ then $\overline{X} \sim \mathrm{N}\left(\mu, \frac{\sigma^2}{n}\right)$ and that a test for μ can be carried out using: $\frac{\overline{X}-\mu}{\sigma/\sqrt{n}} \sim \mathrm{N}(0,\ 1^2)$. No proofs required. Hypotheses should be stated in terms of the population mean μ. Knowledge of the Central Limit Theorem or other large sample approximations is not required.