

Topics	What students need to learn:		
	Content	Guidance	
<b>4</b> <b>Statistical distributions</b>	4.1	<p><b>Understand and use simple, discrete probability distributions (calculation of mean and variance of discrete random variables is excluded), including the binomial distribution, as a model; calculate probabilities using the binomial distribution.</b></p>	<p><b>Students will be expected to use distributions to model a real-world situation and to comment critically on the appropriateness.</b></p> <p><b>Students should know and be able to identify the discrete uniform distribution.</b></p> <p><b>The notation <math>X \sim B(n, p)</math> may be used.</b></p> <p><b>Use of a calculator to find individual or cumulative binomial probabilities.</b></p>
	4.2	<p>Understand and use the Normal distribution as a model; find probabilities using the Normal distribution</p> <p>Link to histograms, mean, standard deviation, points of inflection</p> <p>and the binomial distribution.</p>	<p>The notation <math>X \sim N(\mu, \sigma^2)</math> may be used.</p> <p>Knowledge of the shape and the symmetry of the distribution is required. Knowledge of the probability density function is not required. Derivation of the mean, variance and cumulative distribution function is not required.</p> <p>Questions may involve the solution of simultaneous equations.</p> <p>Students will be expected to use their calculator to find probabilities connected with the normal distribution.</p> <p>Students should know that the points of inflection on the normal curve are at <math>x = \mu \pm \sigma</math>.</p> <p>The derivation of this result is not expected.</p> <p>Students should know that when <math>n</math> is large and <math>p</math> is close to 0.5 the distribution <math>B(n, p)</math> can be approximated by <math>N(np, np[1 - p])</math></p> <p>The application of a continuity correction is expected.</p>

Topics	What students need to learn:		
	Content		Guidance
<b>4</b> <b>Statistical distributions</b> <i>continued</i>	4.3	Select an appropriate probability distribution for a context, with appropriate reasoning, including recognising when the binomial or Normal model may not be appropriate.	Students should know under what conditions a binomial distribution or a Normal distribution might be a suitable model.