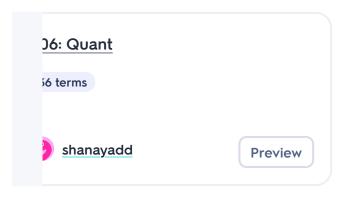
Distribution - STAT110 Otago

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Terms in this set (21)

mean of the binary (Bernoulli) distribution	μ= ρ
variance(方差) of the binary (Bernoulli) distribution	σ^2 = p (1 - p)
difference between binary distribution and binomial distribution	n = 1 => binary distribution n > 1 => binomial distribution
mean of the binomial distribution	μ=np
variance <i>of the</i> binomial distribution	$\sigma^2 = np(1-p)$
Conditions for binomial distribution	Outcome is binary. We have n independent trials. The number of trials is fixed. Probability of success π must stay constant.
Probability of x successes in n trials	$=\binom{n}{x}\pi^{x}$

binomial coefficient (n choose k)	n! / (k!)(n-k)!
	no need to memorise
standard normal distribution(Z):	$Z \sim N (\mu = 0, \sigma^2 = 1)$
μ (normal distribution()	moves the curve but does not change its shape
σ (moves the curve but does not change its shape)	spreads the curve more widely about X = μ but does not alter the centre
Compare a relative frequency histogram with a probability distribution	Relative frequency histogram represents a sample (smaller number of individuals). Probability density function represents a population (large number of individuals).
how to estimate the value of the parameters if estimate a probability distribution curve from a relative frequency histogram	μ is estimated by the sample mean σ is estimated by the sample standard deviation, s.
what does the areas under the normal distribution curve represent?	probabilities
what is <i>Z-score (Z-value)</i>	number of standard deviations away from the mean Any normal distribution value, $X \sim N(\mu X, \sigma^2 X)$, can be put on the standard normal scale, $Z \sim N(0, 1)$. Z-score follows a standard normal distribution
formula for <i>Z-Value</i>	$Z = (X - \mu X) / \sigma X$
when will the sampling distribution of the mean will follow a normal distribution?	if x(<i>the samples, not X</i>) is large enough

Central Limit Theorem (CLT)	the sampling distribution derived from a simple random sample will be approximately normally distributed
What is the mean of the sampling distribution?	population mean
	$\mu X_bar = \mu X$
Variance of the sampling distribution	the variability of sample means $\sigma_{\overline{X}} = \frac{\sigma_X}{\sqrt{n}}$
	If sample size n is greater, then the standard error of the mean is smaller (more compact distribution, greater precision).
Notes on the sampling distribution	If X is normal, then X_bar is normal (for any n)
	If X is not normal, then X_bar is approximately normal for large n (central limit theorem)