

Math 10 Exam 2 Topics
Thursday, May 17, 2016

You may bring to the exam:

- Your calculator – please check batteries
- A pen or pencil
- 1 8 ½ by 11” page of handwritten notes (both sides)

The exam will cover:

Chapter 3 – Probability

- Calculating probabilities
 - Given a situation e.g. drawing 2 cards
 - Using probability rules, including conditional probability
 - Using a contingency table
- Mutually exclusive events
- Test for independence
- Tree diagrams – with replacements and without replacement

Chapter 4 – Discrete distributions

- PDF (table)
- Expected value μ
- Binomial distributions
 - Three characteristics of a binomial experiment
 - Mean $\mu = np$ and standard deviation $\sigma = \sqrt{npq}$
 - Calculating probabilities $X \sim B(n,p)$ using your calculator (binompdf and binomcdf)

Chapter 6 – Normal distribution

- Graph (bell curve): the PDF is the curve and the CDF is the area under the curve
- $X \sim N(\mu, \sigma)$ where μ = mean and σ = standard deviation
- Calculating probabilities and percentiles using your calculator (normalcdf and invNorm)
- Finding z-scores: $z = \frac{x - \mu}{\sigma}$

Chapter 7 – Central Limit Theorem

- \bar{X} = sample means for samples of size n
- \bar{X} has a normal distribution $\bar{X} \sim N(\mu_{\bar{X}}, \sigma_{\bar{X}})$ based on the mean μ_X and standard deviation σ_X
- The means for \bar{X} and X are the same: $\mu_{\bar{X}} = \mu_X$
- Standard deviation $\sigma_{\bar{X}} = \frac{\sigma_X}{\sqrt{n}}$
- Finding z-scores