MATH-338 Midterm 2 Cheat Sheet

THEORY

Day 14: probability density function is represented an integral with function $f(x)$. Our probability lies within the curve and is always 1. Density curve $\rightarrow$ bell curve. Z-Score allows us to have a universal standard for density curves with different scales. They are directly proportional to the standard deviation and the delta from the mean of the graph.

Day 15: unimodal: one hump, bimodal: two humps. Mean is resistant whereas the mean is subject to change. Density curves decay to histograms (integral $\rightarrow$ to Reimann Sum). Whisker plots are an effective method to determine if a data set contains outliers (data points not belonging to the sample set)

FORMULAS

- $\sqcap = width \times \frac{1}{width}$ (finite curve)
- $Z = \frac{x-\mu}{\sigma}$ (z-score)
- $X \sim N(\mu\,, \sigma)$

- IQR $= Q_3 - Q_1$
- $K = 1.5$
- Lower fence: $Q_1 - K \times IQR$
- Upper fence: $Q_3 + K \times IQR$