

## Formulas for Exam 3

Math 1040-1

Unless otherwise indicated, these formulas will not be provided on Exam 3.

### Chapter 5

- $z$ -score:  $z = \frac{x - \mu}{\sigma}$
- $P(z \geq x) = 1 - P(z < x)$
- $P(x_1 \leq z \leq x_2) = P(z \leq x_2) - P(z < x_1)$
- $\mu_{\bar{x}} = \mu$
- Standard error of the mean = Standard deviation of the mean =  $\sigma_{\bar{x}} = \frac{\sigma}{\sqrt{n}}$
- Binomial Distribution:
  - $\mu = np$
  - $\sigma = \sqrt{npq}$  (Given)

### Chapter 9

- $r = \frac{n \sum(xy) - (\sum x)(\sum y)}{\sqrt{n \sum(x^2) - (\sum x)^2} \sqrt{n \sum(y^2) - (\sum y)^2}}$  (Given)
- $\hat{y} = mx + b$  with
  - $m = \frac{n \sum(xy) - (\sum x)(\sum y)}{n \sum(x^2) - (\sum x)^2}$  (Given)
  - $b = \bar{y} - m\bar{x} = \frac{\sum y}{n} - m \frac{\sum x}{n}$  (Given)