

# OFFICIAL STAT 201 EXAM 2 FORMULA SHEET

## FALL 2024



### REGRESSION

$$\hat{y} = b_0 + b_1x$$

$$e = y - \hat{y}$$

### PROBABILITY

$$P(S) = 1 \quad S - \text{The set of all possible outcomes}$$

$$P(\text{not } A) = 1 - P(A)$$

$$P(A) = 1 - P(\text{not } A)$$

$$P(A \text{ or } B) = P(A) + P(B) \quad A \text{ and } B \text{ are mutually exclusive}$$

$$P(A \text{ and } B) = P(A) * P(B) \quad A \text{ and } B \text{ are independent}$$

### SAMPLING DISTRIBUTIONS

<b>Proportion</b>	$\mu(\hat{p}) = p$	$SD(\hat{p}) = \sqrt{\frac{pq}{n}}$	$z_{\hat{p}} = \frac{\hat{p} - p}{SD(\hat{p})}$
<b>Mean</b>	$\mu(\bar{y}) = \mu$	$SD(\bar{y}) = \frac{\sigma}{\sqrt{n}}$	$z_{\bar{y}} = \frac{\bar{y} - \mu}{SD(\bar{y})}$