

Final Exam Equations

Z-score:
$$Z = \frac{x_i - \bar{x}}{s}$$

Normal Distribution (% of cases):

0 to 0.5 = 19.5%; 0 to 1 = 34.13%; 0 to 1.5 = 43.32%; 0 to 2 = 47.73%; 0 to 2.5 = 49.38%

Chi Square:

$$X^2 = \sum \frac{(fo - fe)^2}{fe} \quad f_e = [(\text{row total})(\text{column total})]/n$$

where, f_o = observed frequencies (actual)
 f_e = expected frequencies

Lambda:

$$\lambda = \frac{L - M}{L}$$

where, L = # of errors predicting w/o independent variable
 M = # of errors predicting with independent variable

Gamma:

$$\gamma = \frac{N_s - N_D}{N_s + N_D} \quad \text{where: } N_s = \text{“same” pairs, \# of}$$
$$N_D = \text{“inverse” pairs, \# of}$$

Pearson's Correlation Coefficient:

$$r = \frac{\sum(x_i - \bar{x})(y_i - \bar{y})}{\sqrt{\sum(x_i - \bar{x})^2 \sum(y_i - \bar{y})^2}}$$

Regression equation: $y = a + bx$ a = y-intercept b = slope

Regression Coefficient:

$$b = \frac{\sum[(x_i - \bar{x})(y_i - \bar{y})]}{\sum(x_i - \bar{x})^2}$$

Constant:

$$a = \bar{y} - b(\bar{x})$$