

1. R^2 and R_{adj}^2 are the coefficient of determination and the adjusted coefficient of determination for model $y = \beta_0 + \beta_1 x_1 + \cdots + \beta_k x_k + \epsilon$ based on a sample of size n .
 - (1) Find a formula expressing R_{adj}^2 via R^2 .
 - (2) Find a formula expressing R^2 via R_{adj}^2 .
2. 3.5 p126
Consider model $y = \beta_0 + \beta_1 x_1 + \beta_2 x_6 + \epsilon$ with data in Table B.3 on p576 also in file B3.txt with observations on y , x_1 and x_6 only.
 - (1) (d) Find a 95% C. I. for β_1 .
 - (2) (f) Find a 95% C. I. on the mean gasoline mileage when $x_{01} = 275$ in³ and $x_{06} = 2$ barrels.
 - (3) Find a 90% upper-sided confidence interval for mean gasoline mileage when $x_{01} = 275$ in³ and $x_{06} = 2$ barrels.