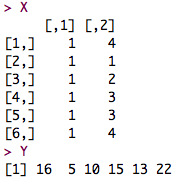
**Question 1 – textbook 5.5 – Consumer Finance**

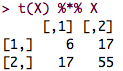
Here’re the design matrix X, and the response vector Y



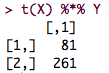
1. Find YTY

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2. Find XTX

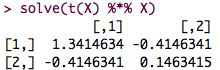


3. Find XTY



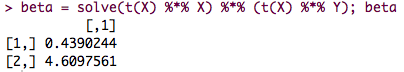
**Question 3 – textbook 5.13 – Continuation of Consumer Finance**

Find (XTX)-1

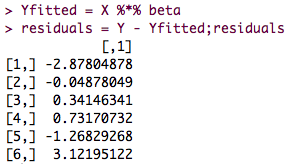


**Question 4 – textbook 5.24 – Continuation of Consumer Finance**

A.1) Find vector of estimated regression coefficients



A.2) Vector of residuals



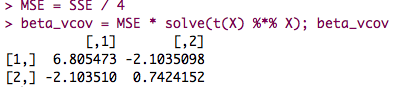
A.3) SSR

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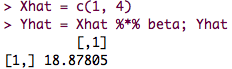
A.4) SSE

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A.5) Estimated variance and covariance matrix of b



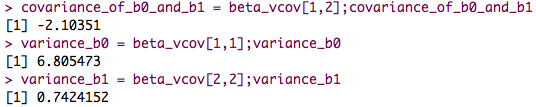
A.6) Point estimate of E(Yh) when Xh = 4



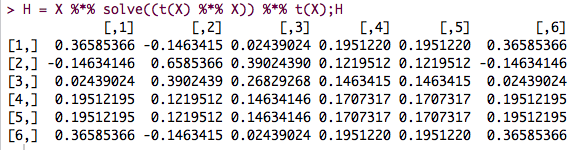
A.7) s2{pred} when Xhat = 4

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B) Find variance of beta0, beta1, and their covariance



C) Find the hat matrix H



D) Find S2{e}

