Summary of Hypothesis Tests

Test #	Hypothesis test	Models for test	Test dist'n	What kind of scenarios would call for this test?	R code for results	Ref (Lesson + slide #)
1 **General form**	Overall test (like test 3 and 4) Single covariate test (like test 2) Test for covariate subset (like test 5)	Ex: Subset is β_1, β_2 H_0: $Y_i = \beta_0 + \beta_3 X_{3i} + \cdots + \beta_j X_{ji} + \varepsilon_i$ H_1: $Y_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \cdots + \beta_j X_{ji} + \varepsilon_i$	F			
2	H_0: $\beta_2 = 0$ H_1: $\beta_2 \neq 0$	H_0: $Y_i = \beta_0 + \beta_1 X_{1i} + \beta_3 X_{3i} + \cdots + \beta_j X_{ji} + \varepsilon_i$ H_1: $Y_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \cdots + \beta_j X_{ji} + \varepsilon_i$	F or T			
3	H_0: None of the covariates explain variation in Y H_1: At least one covariate explains variation in Y	H_0: $Y_i = \beta_0 + \varepsilon_i$ H_1: $Y_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \cdots + \beta_j X_{ji} + \varepsilon_i$	F			
4 (Same as 3)	H_0: $\beta_1 = \beta_2 = \cdots = \beta_j = 0$ H_1: At least one coefficient does not equal 0	H_0: $Y_i = \beta_0 + \varepsilon_i$ H_1: $Y_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \cdots + \beta_j X_{ji} + \varepsilon_i$	F			
5	H_0: $\beta_2 = \beta_3 = 0$ H_1: $\beta_2 \neq 0$ and/or $\beta_3 \neq 0$		F			