Homework Policies: You should give a brief and concise explanation for each question. Just writing down an answer with no explanation is usually not sufficient. If the homework requires output from Stata, incorporate that output into your written assignments. Homework is due at the *beginning* of class on the day indicated.

(1) M&M 6.58, page 392

(2) M&M 6.70, page 393

(3) M&M 6.95, page 400

(4) M&M 6.112, page 411

(5) M&M 6.115, page 441

(6) M&M 7.33, page 445

(7) M&M 7.41, page 446; **The data are on the course webpge in the file mm7.41.dta**

(8) M&M 7.80, page 470-471

(9) M&M 8.32, page 505; **Also perform a hypothesis test of H_0: p = 0.33**

(10) A survey of undergraduate students collected information on GPA and membership in a fraternity or sorority. It is of interest to compare the mean GPA of students who belong to a fraternity/sorority to those who do not. The data are in the file *student.dta* on the course webpage. The file contains two variables "gpa" (which contains the GPA of each student) and "frat" (which indicates whether the student is a member of a fraternity/sorority.
   (a) State H_0 and H_A.

   (b) Calculate the sample mean GPA and standard deviation for each group.

   (c) Assuming the variability of GPAs is the same in each group, conduct a two-sample t-test.

   (d) Assuming the variability of GPAs in NOT the same in each group, conduct a two-sample t-test.

   (e) Based on your results from part (d), give a 95% CI for the difference in means between these two groups.

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(11) A study examined the records of 1711 bicyclists aged 15 or older who were fatally injured in bicycle accidents between 1987 and 1991 and were tested for alcohol consumption (a BAC of 0.01% or higher). The data, broken down by gender are below.

Gender	N (sample size)	X (tested positive)
Male	1520	515
Female	191	27

(a) State H_0 and H_A.

(b) Calculate the sample proportion of male and female bicyclists who tested positive for alcohol.

(c) Conduct a two-sample proportion test of the hypotheses in part (a).

Famous Statistician of the Week
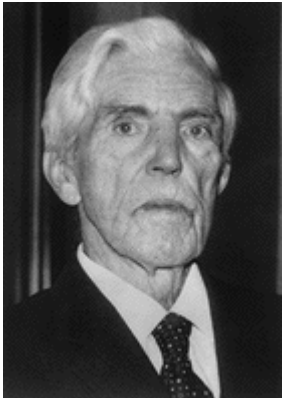
Who is this dude?
Trygve Haavelmo
1911-1999

Why is he cool?
In his thesis, Haavelmo presented a new and pathbreaking approach to the estimation of economic relations by applying methods used in mathematical statistics. His work established the foundations for a new field of research which came to dominate the study of estimating complex economic relations.

In his review of Haavelmo's doctoral thesis, the British Nobel laureate Richard Stone wrote that it was a brilliant contribution to econometrics which would have a revolutionary effect on the degree of success in estimating economic relations.

After he became professor at the University of Oslo, Haavelmo's research interests turned to economic theory. His book, entitled, *A Study in the Theory of Economic Evolution* (1954), was a pioneering study of the possible reasons for economic underdevelopment of a country in relation to other countries, long before other economists became seriously engaged in development research.   Courtesy of *http://www.nobel.se/economics/laureates/1989/haavelmo-bio.html*

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