# Sample Scripts for Assignment 1

of Econometrics 1 (fall 2019)

### 1. LLN

```
nulldata 1000
genr index
series p = 0.78
series X = randgen(B, 0.78, 1)

series means
means[1] = X[1]
loop i=2..$nobs --quiet
    means[i] = (means[i-1] * (i-1) + X[i]) / i
endloop
gnuplot means p index --with-lines --fit=none --output=display \
{ set xlabel 'Sample size'; set ylabel 'Sample mean'; }
```

### 2. Table 3.1

```
open "@workdir/data/SW3/cps_ch3.xlsx"

matrix f = zeros(5,11)
strings cnames = defarray("Year", "Ybar_m", "s_m", "n_m", \
  "Ybar_w", "s_w", "n_w", "Ybar diff", "SE of Ybar diff", \
  "lower bound of 95% CI", "upper bound of 95% CI")
cnameset(f, cnames)

lyear = uniq(year)
lsex = uniq(a_sex)

f[,1] = lyear

loop i=1..rows(lyear) --quiet
    loop j=1..rows(lsex) --quiet
        smpl year==lyear[i] && a_sex==lsex[j] --restrict --replace
        f[i,j*3-1] = mean(ahe08)
        f[i,j*3] = sd(ahe08)
        f[i,j*3+1] = int(nobs(ahe08))
    endloop
    f[i,8] = f[i,2] - f[i,5]
    f[i,9] = sqrt(f[i,3]^2 / f[i,4] + f[i,6]^2 / f[i,7])
    f[i,10] = f[i,8] - critical(z, 0.025) * f[i,9]
    f[i,11] = f[i,8] + critical(z, 0.025) * f[i,9]
endloop
```