Economics 311 — Fall 2017
Daily Problem #8 — September 25

In class, we will perform a Monte Carlo experiment to examine the properties of the OLS estimator when the classical assumptions are valid. Our experiment will involve generating repeated samples using the following "do-file" (sequence of commands). (The rnormal(a,b) function generates random numbers from a normal distribution with mean *a* and standard deviation *b*.)

1. For each command, tell what it does and how it would be used in such a simulation:

```
gen e = rnormal(0,0.3)

gen y = 10+3*x+e

reg y x
```

2. If we retrieved the $\hat{\beta}_0$ and $\hat{\beta}_1$ estimates from repeated repetitions of this sequence of commands, what would you expect to be the mean of their sampling distributions?