1. Example: Is the new driver longer?

2. Hypothesis testing jargon:
   (a) null hypothesis:
   (b) possible decision: reject the null
   (c) significance level ($\alpha$): largest $P$-value for which we plan to reject the null hypothesis
   (d) Type I error: reject null even though true
   (e) significance level is probability of type I error
   (f) alternate hypothesis: what we hope to find evidence for
   (g) Type II error: do not reject null even though alternate is true
   (h) $\beta$: probability of Type II error
   (i) power: $1 - \beta$.

3. Power depends on three things:
   (a) The significance level (the lower the significance level the greater the power)
   (b) What is true (the greater the difference from the null, the greater the power)
   (c) The sample size (the larger the sample size, the greater the power)

4. Example: What is the power for $n = 20$, $\alpha = 5$, $\sigma = 25$ and $\delta = 15$?

   ```r
   power.t.test(n = 10, delta = 15, sd = 25, sig.level = 0.05, power = NULL)
   
   Two-sample t test power calculation
   
   n = 10
   delta = 15
   sd = 25
   sig.level = 0.05
   power = 0.2453
   alternative = two.sided
   
   NOTE: n is number in *each* group
   ```