Homework Solutions
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Exercise 10

We will show all seven steps.

1. Let d be the "before" value minus the "after" value and let μ_D be the average value of d (over all possible observations, not just these six). That is, $\mu_D = \mu_{\text{Before}} - \mu_{\text{After}}$.

$$H_0: \quad \mu_D = 0$$
$$H_1: \quad \mu_D > 0$$

2. $\alpha = 0.10$.

3. Let $t = \dfrac{\bar{d} - 0}{s_D/\sqrt{n}}$.

4. Enter the differences into the TI-83 and use `1-Var-Stats` to find $\bar{d} = 1$ and $s_D = 1.673$. Then
$$t = \frac{1 - 0}{1.673/\sqrt{6}} = 1.464.$$

5. p-value $= $ `tcdf(1.464,E99,5)` $= 0.1015$.

6. The p-value is (barely) greater then 0.10, so accept H_0.

7. The safety program had no effect.

In Steps 4 and 5, you could use `T-Test` and get the same values that we got.