Exercise 15

1. Let μ be the average time required to complete the test.

$$H_0: \quad \mu = 50$$
$$H_1: \quad \mu < 50$$

2. $\alpha = 0.05$.

3. The test statistic is $t = \dfrac{\overline{x} - \mu_0}{s/\sqrt{n}}$.

4. $t = \dfrac{48 - 50}{5/\sqrt{36}} = -\dfrac{2}{0.8333} = -2.4$.

5. p-value $= $ `tcdf(-E99,-2.4,35)` $= 0.0109$.

6. Reject H_0.

7. The average time required to complete the test is less than 50 minutes.