## Homework Solutions

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## Exercise 15

1. Let $\mu$ be the average time required to complete the test.

$$
\begin{array}{ll}
H_{0}: & \mu=50 \\
H_{1}: & \mu<50
\end{array}
$$

2. $\alpha=0.05$.
3. The test statistic is $t=\frac{\bar{x}-\mu_{0}}{s / \sqrt{n}}$.
4. $t=\frac{48-50}{5 / \sqrt{36}}=-\frac{2}{0.8333}=-2.4$.
5. $p$-value $=\operatorname{tcdf}(-$ E99 $,-2.4,35)=0.0109$.
6. Reject $H_{0}$.
7. The average time required to complete the test is less than 50 minutes.
