Lesson #59 · Topic 4C · Practice

Answer Key

1. $H_0 : \mu = 3, H_a : \mu \neq 3$, where $\mu =$ true mean weight of meat on all six-inch sandwiches made by the newly hired employees at this manager's restaurant.

2. a. $H_0 : \mu = \$49,560$
   $H_a : \mu < \$49,560$
   $\mu =$ true mean annual salary for all adults in Pentwater

   b. Yes, $42,813 < $49,560

   c. C

3. a. Assuming H_0 is true ($\mu = 3,500$), there is a 0.003 probability of getting a sample mean of 4,735 steps or greater purely by chance.

   b. Because 0.003 < 0.05, we reject H_0 and we do have convincing statistical evidence that the true mean number of daily steps taken for all adults who wear a fitness tracker is greater than 3,500.

4. a. An interpretation of the p -value must include the condition that H_0 is true. In addition, H_a is two-sided, so the interpretation needs to account for the possibility of the statistic being on either side of the true mean.

   Corrected version: *Assuming H_0 is true* ($\mu = 75$), there is a 0.07 probability of getting a $\bar{x}$ of 81 *or more extreme*, purely by chance.

   b. It is incorrect to accept H_0 . Instead, we should fail to reject H_0 . In addition, the last part of the conclusion for a hypothesis test should not be about H_0 ; it should be about H_a .

   Corrected version: Because 0.07 > 0.05, we *fail to reject H_0* and we do *not* have convincing evidence that the true mean is *different than 75.*

5. A

6. A