



ASQ CRE Prep course

Lesson II. B. 3. a.

Hypothesis Testing

The Process

A wide-angle photograph of a tropical beach. The foreground is a vast, flat expanse of white sand. The water is exceptionally clear, showing a vibrant turquoise color near the shore that deepens into a darker blue further out. The horizon is a straight line in the distance, with a few small, white clouds scattered across the sky. A single person is visible in the distance, walking along the water's edge. The overall atmosphere is serene and beautiful.

What does it mean?

STATISTICAL COMPARISONS

Drawing Conclusions

- **Observe a sample**
- **Surmise something about the population**

7 Step Process

- 1. Define the problem**
- 2. Null hypothesis**
- 3. Alt. hypothesis**
- 4. Critical Value**
- 5. Test Statistic**
- 6. Make an inference**
- 7. Communicate**



Hypothesis Testing Terms

- **Null Hypothesis**
- **Test Statistic**
- **Types of Errors**
 - Type I error
 - Type 2 error
- **One and two tailed tests**

Decision Made

Fail to
Reject
 H_0

Reject
 H_0

Null Hypothesis
True False

| Decision Made | Null Hypothesis True | Null Hypothesis False |
|----------------------|----------------------|-----------------------|
| Fail to Reject H_0 | | |
| Reject H_0 | | |

What is lower
practical limit of
confidence?



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For Means