Hypothesis Testing

1. Traditional Method
2. P-Value Method
3. Confidence Interval Method

Steps for P-Value Method

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Step 2 Compute the test value (z- or t- score).

Use same equation for finding z- or t- score:

$$z = \frac{x - \mu}{\frac{\sigma}{\sqrt{n}}} \quad \text{or} \quad z = \frac{x - \mu}{\frac{s}{\sqrt{n}}} \quad \text{or} \quad t = \frac{x - \mu}{\frac{s}{\sqrt{n}}}$$

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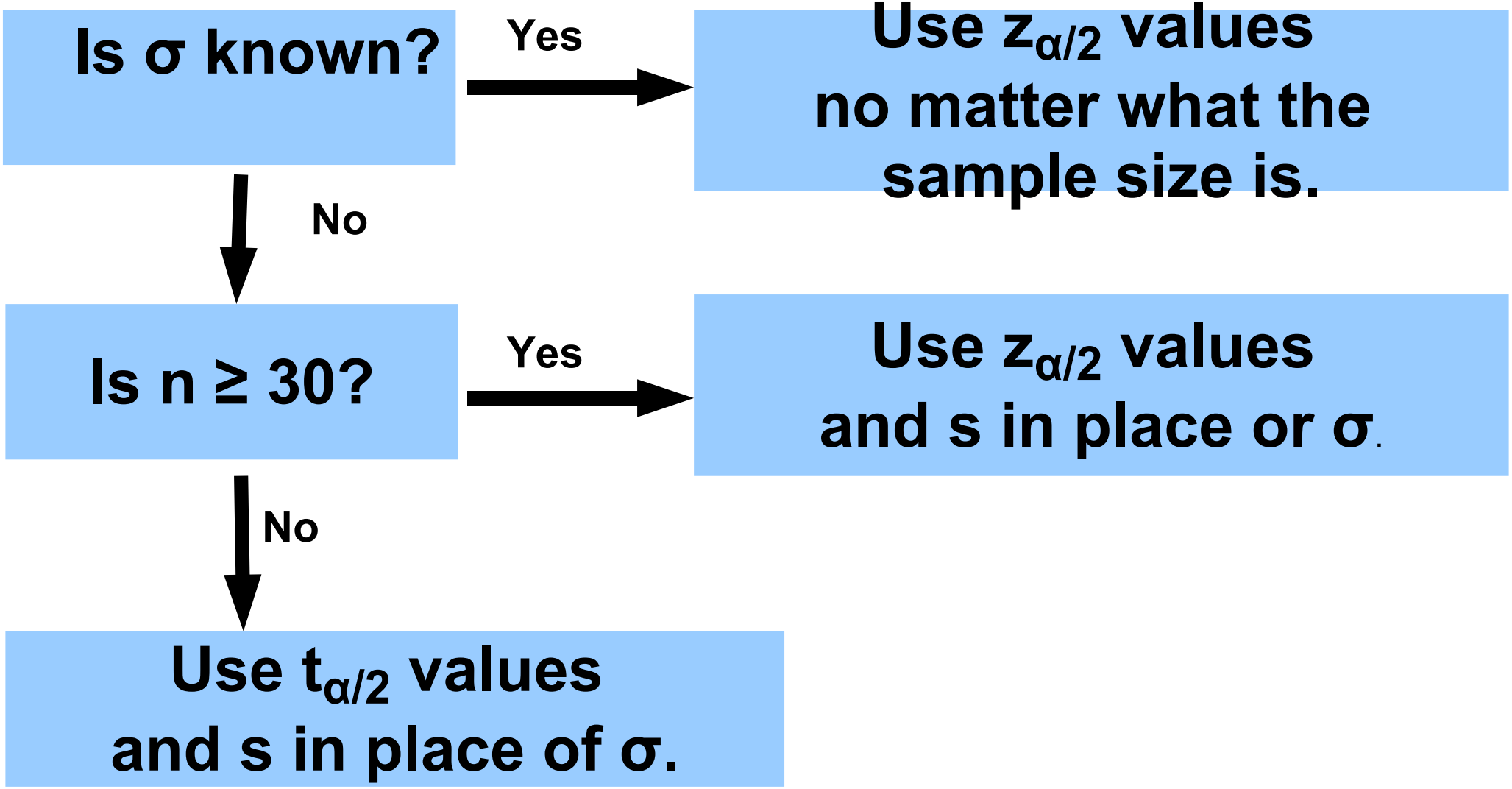
Step 5 Summarize the results.

When to use the z or t Distribution.



9-6

A researcher wishes to test the claim that the average age of life guards in Ocean City is greater than 24 years. She selects a sample of 36 life guards and finds the mean of this sample to be 24.7 years, with a s.d. of 2 years. Is there evidence to support her claim at $\alpha = 0.05$?

Use the p-method.

9-7

A meteorologist claims that the average wind speed in a certain city is 8 mph. A sample of 32 days was found to have an average winds speed of 8.2 mph, with s.d. of 0.6 mph. At $\alpha = 0.05$, is there enough evidence to reject the meteorologist's claim?

Use the p-method.

9-30

A college professor besieged by whining students, tells them that the average cost of a paperback textbook is less than $27.50. In response the students take a random sample of 50 textbooks and find the mean is $29.30 with s.d. $5.00. Who is correct? Use the p-value method and with $\alpha = 0.05$.

9-16

The manager of a large factory believes that the average hourly wage of the employees is below $9.78 per hour, with s.d. of $1.42. the manager takes a sample of 18 employees and finds the mean hourly wage is $9.60. At a = 0.10 is there enough evidence to support the manager's claim. Use the p-method.