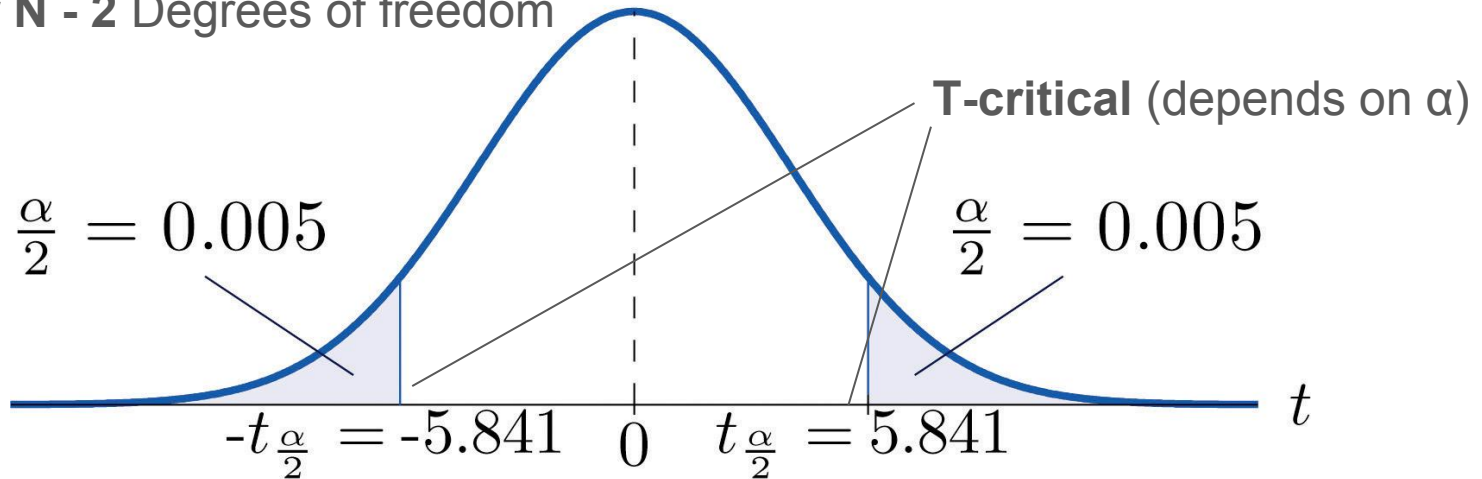# T-test

H_a: $\mu \neq \mu$ -> t-value > t-critical -> Alternative hypothesis true
H_o: $\mu = \mu$ -> t-value < t-critical -> Null hypothesis true
α: 0.05 or 0.01 Accuracy of our conclusion -> Significance level
df: N - 1 or N - 2 Degrees of freedom

T-critical (depends on α)

$$\frac{\alpha}{2} = 0.005 \qquad\qquad \frac{\alpha}{2} = 0.005$$

$$-t_{\frac{\alpha}{2}} = -5.841 \quad 0 \quad t_{\frac{\alpha}{2}} = 5.841$$

Reject H_0 0   Reject H_0

$$T = 0.877$$

T-test when:
- **Normally distributed populations**
- **Small sample sizes**