

Identifying the Reference Distribution

| Population | Variance | Sample Size | Reference Distribution | Test Statistic |
|------------|----------|-------------|------------------------|---|
| Normal | Known | Any | $N(0,1)$ | $\frac{\bar{x} - \mu}{\frac{\sigma}{\sqrt{n}}}$ |
| Normal | Unknown | Any | t_{n-1} | $\frac{\bar{x} - \mu}{\frac{s}{\sqrt{n}}}$ |
| Any | Known | ≥ 30 | $N(0,1)$ | $\frac{\bar{x} - \mu}{\frac{\sigma}{\sqrt{n}}}$ |
| Any | Unknown | ≥ 30 | $N(0,1)$ | $\frac{\bar{x} - \mu}{\frac{s}{\sqrt{n}}}$ |