**p-value** is the probability that a test statistic is at least as extreme as observed. Thus for fixed $\alpha$, we reject $H_0$ if $p \leq \alpha$.

| Side | Tail | Var | P-Value |
|---|---|---|---|
| 1 | Low | $\sigma^2$ | $p = \Phi(z)$ |
| 1 | Low | $S^2$ | $p = F(t)$ † |
| 1 | Up | $\sigma^2$ | $p = 1 - \Phi(z)$ |
| 1 | Up | $S^2$ | $p = 1 - F(t)$ † |
| 2 | - | $\sigma^2$ | $p = 2(1 - \Phi(\lvert z \rvert))$ |
| 2 | - | $S^2$ | $p = 2(1 - F(\lvert t \rvert))$† |

† $F$ is the CDF of the t-distribution.