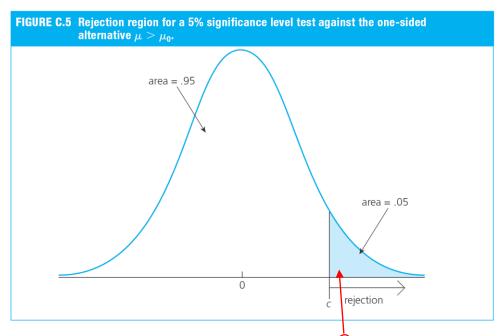
A comparison of one-tailed and two-tailed critical values (denoted by c) and p-values

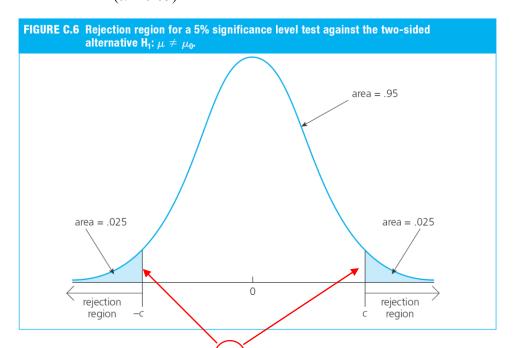
1. Critical values (c)

• One-tailed test ($\alpha = 0.05$)



The critical value depends on the significance level (α)

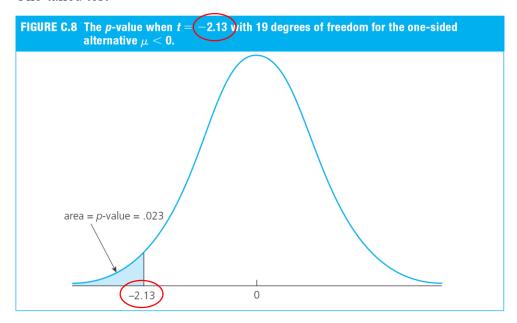
• Two-tailed test ($\alpha = 0.05$)



The critical value c depends on $(\alpha/2)$, instead of α .

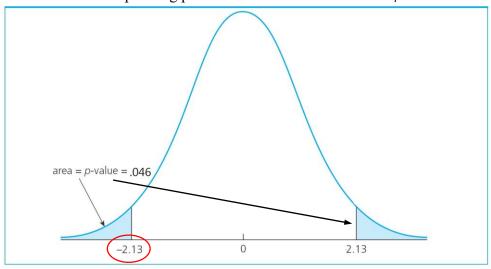
2. *p*-values

One-tailed test



• Two-tailed test

Below is the corresponding plot for the two-sided alternative $\mu \neq 0$.



Note: two-tailed p-value = 2 \times one-tailed p-value