(c)

FOR TWO POPULATIONS MEANS TEST

σ_1^2 AND σ_2^2 (σ_1 AND σ_2) ARE UNKNOWN

ONESIDED TEST <u>P 249</u>

(I) <u>FOR CASE 1</u>: $\sigma_1^2 = \sigma_2^2$, WE ARE TESTING THE HYPOTHESIS

IF $H_1: \mu_1 - \mu_2 > 0$, USE THE SAME RULE STATED ON P 183

REJECTION RULE <u>IF</u> $0 <$ LOWER LIMIT REJECT H_0

LOWER LIMIT $= \bar{X}_1 - \bar{X}_2 - (t_{\alpha, n_1+n_2-2})\left(S_p\sqrt{\frac{1}{n_1}+\frac{1}{n_2}}\right)$

(II) IF $H_1: \mu_1 - \mu_2 < 0$, THE REJECTION RULE IS STATED AS IF $0 >$ UPPER LIMIT REJECT H_0

UPPER LIMIT $= \bar{X}_1 - \bar{X}_2 + (t_{\alpha, n_1+n_2-2})\left(S_p\sqrt{\frac{1}{n_1}+\frac{1}{n_2}}\right)$

<u>FOR CASE 2</u>: $\sigma_1^2 \neq \sigma_2^2$

III IF $H_1: \mu_1 - \mu_2 > 0$, USE THE REJECTION RULE

IF $0 <$ LOWER LIMIT REJECT H_0

LOWER LIMIT $= \bar{X}_1 - \bar{X}_2 - (t_{\alpha, \nu})\sqrt{\frac{S_1^2}{n_1}+\frac{S_2^2}{n_2}}$

IV IF $H_1: \mu_1 - \mu_2 < 0$, THE REJECTION RULE IS STATED AS IF $0 >$ UPPER LIMIT REJECT H_0

UPPER LIMIT $= \bar{X}_1 - \bar{X}_2 + (t_{\alpha, \nu})\sqrt{\frac{S_1^2}{n_1}+\frac{S_2^2}{n_2}}$