

Statistics 2

Samples and hypothesis testing

Section 2: Contingency tables

Solutions to Exercise 3C

2. (i) $H_0 : \mu = 1.73$
 $H_1 : \mu > 1.73$

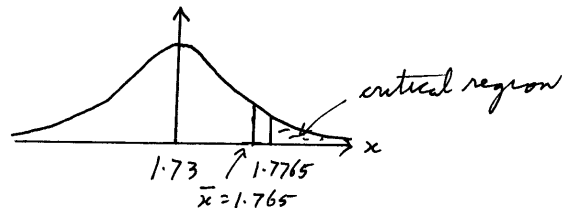
(ii) $X \sim N\left(1.73, \frac{0.08^2}{8}\right) = N(1.73, 0.0008)$

(iii) At the 5% significance level $z = 1.645$

so the critical region is

$$x > 1.73 + 1.645 \times \sqrt{0.0008}$$

$$\therefore x > 1.7765$$



(iv) As $1.765 < 1.7765$ the result is not significant, so H_0 is accepted

Assumption: the heights in the local area are representative of heights of men in general

OR $z = \frac{1.765 - 1.73}{\sqrt{0.0008}} = 1.24$

As $1.24 < 1.645$, the result is not significant, so H_0 is accepted.