Statistics 2

Samples and hypothesis testing

Section 2: Contingency tables

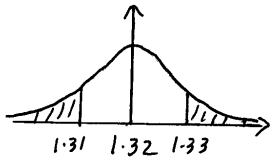
Solutions to Exercise 3C

6. (i) $H_0 : \mu = 1.32$

$H_1 : \mu \neq 1.32$

(ii) $\bar{x} = 1.31$

$\therefore z = \dfrac{1.31 - 1.32}{\frac{0.03}{\sqrt{10}}} = -1.054$



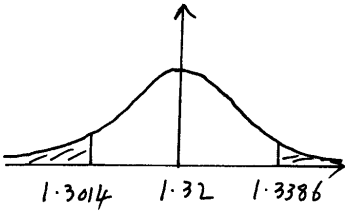
For the 5% significance level the critical value is 1.96 (it is a 2-tail test).

As $1.054 < 1.96$, the result is not significant, so H_0 is accepted, that is, the mean amount of extrusion is 1.32 grams.

(iii) The critical values are

$$1.32 \pm 1.96 \times \frac{0.03}{\sqrt{10}}$$

so the critical region is values outside the interval $[1.3014, 1.3386]$



the critical region is shaded.