

INTERNATIONAL BACCALAUREATE
Mathematics: applications and interpretation

MAI

EXERCISES [MAI 4.16-4.17]
HYPOTHESIS TEST FOR TWO MEANS

A. Paper 1 questions (SHORT)

1. [Maximum mark: 4]

Ann believes that men in Italy are taller than men in Spain.

(a) What kind of test is appropriate to test Ann's claim and under which assumption? [2]

(c) Write down the **null** and **alternative** hypotheses. [2]

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2. [Maximum mark: 5]

For a two-tailed t -test with $H_0: \mu_1 = \mu_2$ and $H_1: \mu_1 \neq \mu_2$

(a) Explain what a significance level of 5% means. [1]

(c) Having in mind that the usual significance levels are 1%, 5% and 10%, write down a comment on the conclusion of the test if the p -value is

(i) 0.78×10^{-3} (ii) 0.0392 (iii) 0.1109 [4]

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