



Coimisiún na Scrúduithe Stáit
State Examinations Commission

Leaving Certificate Examination

Strand 1

Sample Questions

Mathematics

Higher and Ordinary Level

Strand 1
Sample Questions
Mathematics
Higher Level

Question 2

(50 marks)

The principal of a large school claims that the average distance from a student's home to the school is 3.5 km. In order to test this claim, a sample of 60 students from the school was randomly selected. The students were asked how far from the school they lived. The mean distance from these students' homes to the school is 3.7 km with a standard deviation of 0.5 km.

- (a) Test the principal's claim using a 5% level of significance. Clearly state your null hypothesis, your alternative hypothesis and your conclusion.

- (b) In the above sample of 60 students, 20% of them lived within 2.5 km of the school. Find the 95% confidence interval for the proportion of students from that school who live within 2.5 km of the school.

Question 4

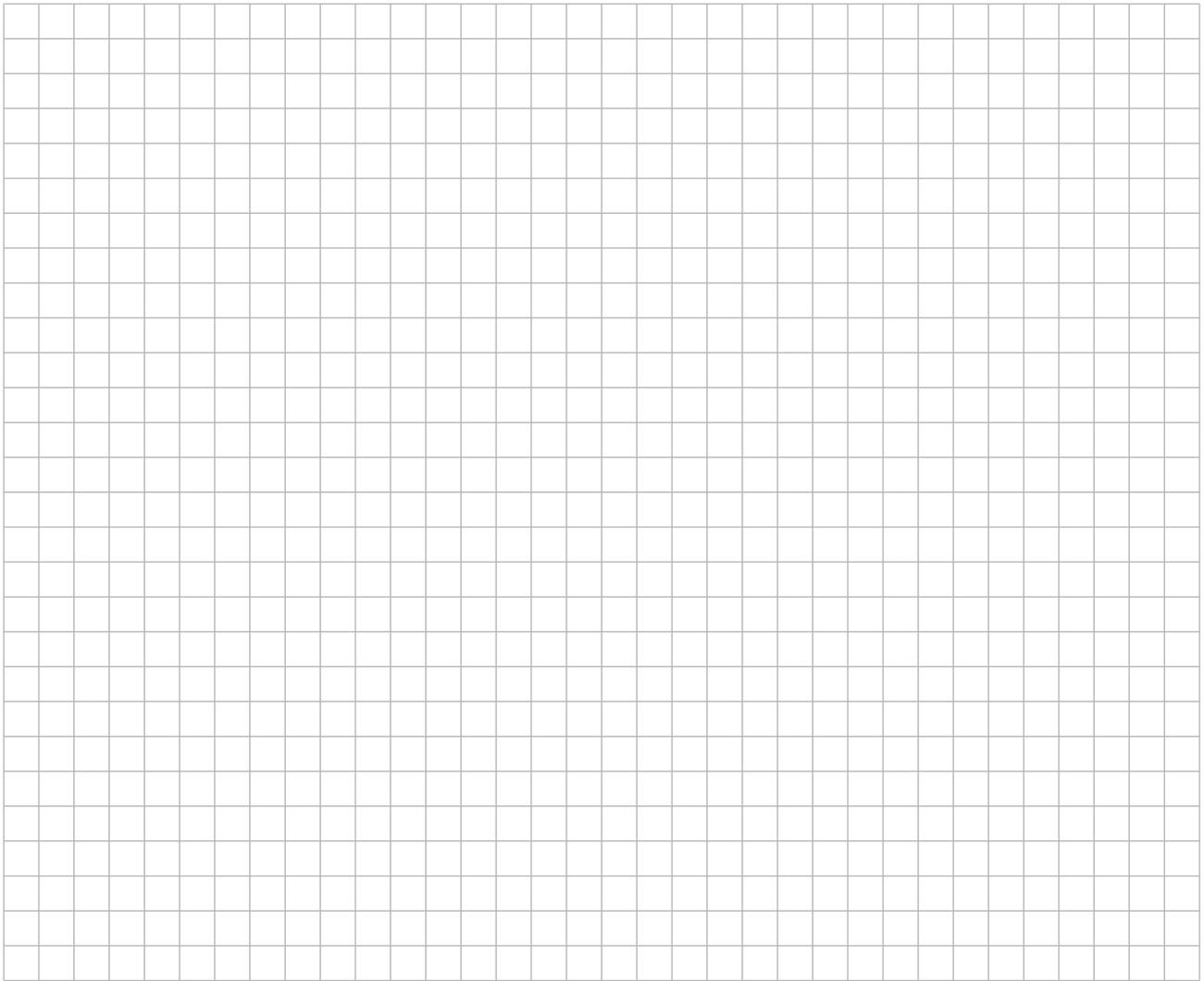
(50 marks)

A car rental company has been using *Evertread* tyres on their fleet of economy cars. All cars in this fleet are identical. The company manages the tyres on each car in such a way that the four tyres all wear out at the same time. The company keeps a record of the lifespan of each set of tyres. The records show that the lifespan of these sets of tyres is normally distributed with mean 45 000 km and standard deviation 8000 km.

- (a) A car from the economy fleet is chosen at random. Find the probability that the tyres on this car will last for at least 40 000 km.

- (b) Twenty cars from the economy fleet are chosen at random. Find the probability that the tyres on at least eighteen of these cars will last for more than 40 000 km.

Strand 1
Sample Questions
Mathematics
Ordinary Level



Note to readers of this document:

These sample questions are intended to help teachers and candidates prepare for the June 2015 and subsequent examinations in *Mathematics*.

In 2015 and subsequent years, Leaving Certificate Mathematics papers at Higher and Ordinary Level will contain two sections.

Section A of the examination paper will consist of six questions, each carrying 25 marks. There will no longer be a choice within Question 6.

Section B will consist of two, three, or four questions. These questions will not necessarily carry equal marks. The number of marks for each will be stated on the examination paper. The total number of marks for Section B will be 150.