

- 6** In a cycling event the times taken to complete a course are modelled by a normal distribution with mean 62.3 minutes and standard deviation 8.4 minutes.

- (a) Find the probability that a randomly chosen cyclist has a time less than 74 minutes. [2]

[illegible]

- (b)** Find the probability that 4 randomly chosen cyclists all have times between 50 and 74 minutes. [4]

[illegible]

In a different cycling event, the times can also be modelled by a normal distribution. 23% of the cyclists have times less than 36 minutes and 10% of the cyclists have times greater than 54 minutes.

- (c) Find estimates for the mean and standard deviation of this distribution. [5]

This image shows a full page of white paper with horizontal dotted lines. The lines are evenly spaced and run across the width of the page, providing a guide for handwriting practice. There are no margins, text, or other markings on the page.