5. The distance an athlete can throw a discus is normally distributed with mean 40 m and standard deviation 4 m

(a) Using standardisation, show that the probability that this athlete throws the discus less than 38.8 m is 0.3821

(2)

This athlete enters a discus competition.
To qualify for the final, they have 3 attempts to throw the discus a distance of more than 38.8 m
Once they qualify, they do not use any of their remaining attempts.

Given that they qualified for the final and that throws are independent,

(b) find the probability that this athlete qualified for the final on their second throw with a distance of more than 44 m

(5)

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Question 5 continued

(Total for Question 5 is 7 marks)