4. Navtej travels to work by train. A train leaves the station every 7 minutes and Navtej's arrival at the station is independent of when the train is due to leave.

(a) Write down a suitable model for the distribution of the time, T minutes, that he has to wait for a train to leave.

(1)

(b) Find the mean and standard deviation of T

(3)

During a 10-week period, Navtej travels to work by train on 46 occasions.

(c) Estimate the probability that the mean length of time that he has to wait for a train to leave is between 3.4 and 3.6 minutes.

(5)

(d) State a necessary assumption for the calculation in part (c).

(1)

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

Question 4 continued

(Total for Question 4 is 10 marks)

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA