Topic: Normal Distribution

Day 3 Question 1

The heights of an adult female population are normally distributed with mean 162 cm and standard deviation 7.5 cm.

(*a*) Find the probability that a randomly chosen adult female is taller than 150 cm.

(3)

Sarah is a young girl. She visits her doctor and is told that she is at the 60th percentile for height.

(*b*) Assuming that Sarah remains at the 60th percentile, estimate her height as an adult.

(3)

The heights of an adult male population are normally distributed with standard deviation 9.0 cm.

Given that 90% of adult males are taller than the mean height of adult females,

(*c*) find the mean height of an adult male.

(4)

Day 3 Question 2

` The length of time, *L* hours, that a phone will work before it needs charging is normally distributed with a mean of 100 hours and a standard deviation of 15 hours.

(*a*) Find P($L > 127$).

(3)

(*b*) Find the value of *d* such that P($L < d$) = 0.10.

(3)

Alice is about to go on a 6 hour journey. Given that it is 127 hours since Alice last charged her phone,

(*c*) find the probability that her phone will not need charging before her journey is completed.

(4)