6 The heights, in metres, of fir trees in a large forest have a normal distribution with mean 40 and standard deviation 8.

(i) Find the probability that a fir tree chosen at random in this forest has a height less than 45 metres.

[2]

....

....

....

....

....

....

....

....

....

....

(ii) Find the probability that a fir tree chosen at random in this forest has a height within 5 metres of the mean.

[2]

....

....

....

....

....

....

....

....

....

....

In another forest, the heights of another type of fir tree are modelled by a normal distribution. A scientist measures the heights of 500 randomly chosen trees of this type. He finds that 48 trees are less than 10 m high and 76 trees are more than 24 m high.

(iii) Find the mean and standard deviation of the heights of trees of this type. [5]

....

....

....

....

....

....

....

....

....

....

....

....

....

....

....

....

....

....

....

....