7 **(a)** The lengths, in centimetres, of middle fingers of women in Raneland have a normal distribution with mean μ and standard deviation σ. It is found that 25% of these women have fingers longer than 8.8 cm and 17.5% have fingers shorter than 7.7 cm.

(i) Find the values of μ and σ. [5]

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The lengths, in centimetres, of middle fingers of women in Snoland have a normal distribution with mean 7.9 and standard deviation 0.44. A random sample of 5 women from Snoland is chosen.

(ii) Find the probability that exactly 3 of these women have middle fingers shorter than 8.2 cm. [5]

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(b) The random variable X has a normal distribution with mean equal to the standard deviation. Find the probability that a particular value of X is less than 1.5 times the mean. [3]

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