

The weights of male leopards in a particular region are normally distributed with mean 55 kg and standard deviation 6 kg.

- (a) Find the probability that a randomly chosen male leopard from this region weighs between 46 and 62 kg. [4]

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The weights of female leopards in this region are normally distributed with mean 42 kg and standard deviation σ kg. It is known that 25% of female leopards in the region weigh less than 36 kg.

- (b) Find the value of σ . [3]

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[illegible]

The distributions of the weights of male and female leopards are independent of each other. A male leopard and a female leopard are each chosen at random.

- (c) Find the probability that both the weights of these leopards are less than 46 kg. [4]

[illegible]