**5** Company *A* produces bags of sugar. An inspector finds that on average 10% of the bags are underweight.

10 of the bags are chosen at random.

**(a)** Find the probability that fewer than 3 of these bags are underweight. [3]

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The weights of the bags of sugar produced by company *B* are normally distributed with mean 1.04 kg and standard deviation 0.06 kg.

**(b)** Find the probability that a randomly chosen bag produced by company *B* weighs more than 1.11 kg. [3]

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81% of the bags of sugar produced by company $B$ weigh less than $w$ kg.

**(c)** Find the value of $w$. [3]

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