6. A baker produces bread buns and bread rolls. The weights of buns, B grams, and the weights of rolls, R grams, are such that $B \sim N(55, 1.3^2)$ and $R \sim N(51, 1.2^2)$

A bun and a roll are selected at random.

(a) Find the probability that the bun weighs less than 110% of the weight of the roll.

(5)

Two buns are chosen at random.

(b) Find the probability that their weights differ by more than 1 gram.

(6)

The baker sells bread in bags. Each bag contains either 10 buns or 11 rolls. The weight of an empty bag, S grams, is such that $S \sim N(3, 0.2^2)$

(c) Find the probability that a bag of buns weighs less than a bag of rolls.

(6)

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TOTAL FOR PAPER: 75 MARKS

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