Question **(30 marks)**

(a) A random variable x follows a normal distribution with a mean of 150 and standard deviation 20. Find $P(170 \leq x \leq 190)$.

(b) There are 13 tickets in a draw. Six of the tickets are blue, four are red and three are green. Three tickets are drawn at random, one at a time, without replacement. Find the probability that the first ticket is blue, the second is red and the third is red or green.

(c) Two adults and four children stand in a row for a photograph. How many different arrangements are possible if the four children are between the two adults?