6 A car park has spaces for 18 cars, arranged in a line. On one day there are 5 cars, of different makes, parked in randomly chosen positions and 13 empty spaces.

(i) Find the number of possible arrangements of the 5 cars in the car park. [2]

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(ii) Find the probability that the 5 cars are not all next to each other. [5]

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On another day, 12 cars of different makes are parked in the car park. 5 of these cars are red, 4 are white and 3 are black. Elizabeth selects 3 of these cars.

(iii) Find the number of selections Elizabeth can make that include cars of at least 2 different colours. [5]

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