Write your answers in the D1 answer book for this paper.

1: The list of numbers shown below represents the masses, in kg, of nine items that are to be moved from one factory to another.

180 300 250 410 240 120 230 310 190

The items will all be moved, by van, at the same time.

Each van can carry at most 600 kg.

(a) Calculate a lower bound for the number of vans required.

(2)

(b) Use the first-fit bin-packing algorithm to allocate the items to vans.

(2)

(Total for Question 1 is 4 marks)