

IB Statistics and Probability Problem 020

There are 50 boxes in a factory. The weights, w in kg , are divided into 5 classes, as shown in the table below.

Classe	Poids (kg)	Nombre de boîtes
A	$9.5 \leq w < 18.5$	7
B	$18.5 \leq w < 27.5$	12
C	$27.5 \leq w < 36.5$	13
D	$36.5 \leq w < 45.5$	10
E	$45.5 \leq w < 54.5$	8

- A. Show that the estimated mean weight of the boxes is 32 kg .
- B. In the factory, there are x boxes labelled "Fragile". They are all in class E . The estimated mean weight of all the other boxes in the factory is 30 kg .
- Calculate the value of x .
- C. A delivery of y additional boxes, all with a weight in class D , is brought to the factory.
- The total estimated mean weight of all the boxes in the factory is less than 33 kg .
- Find the largest possible value of y .