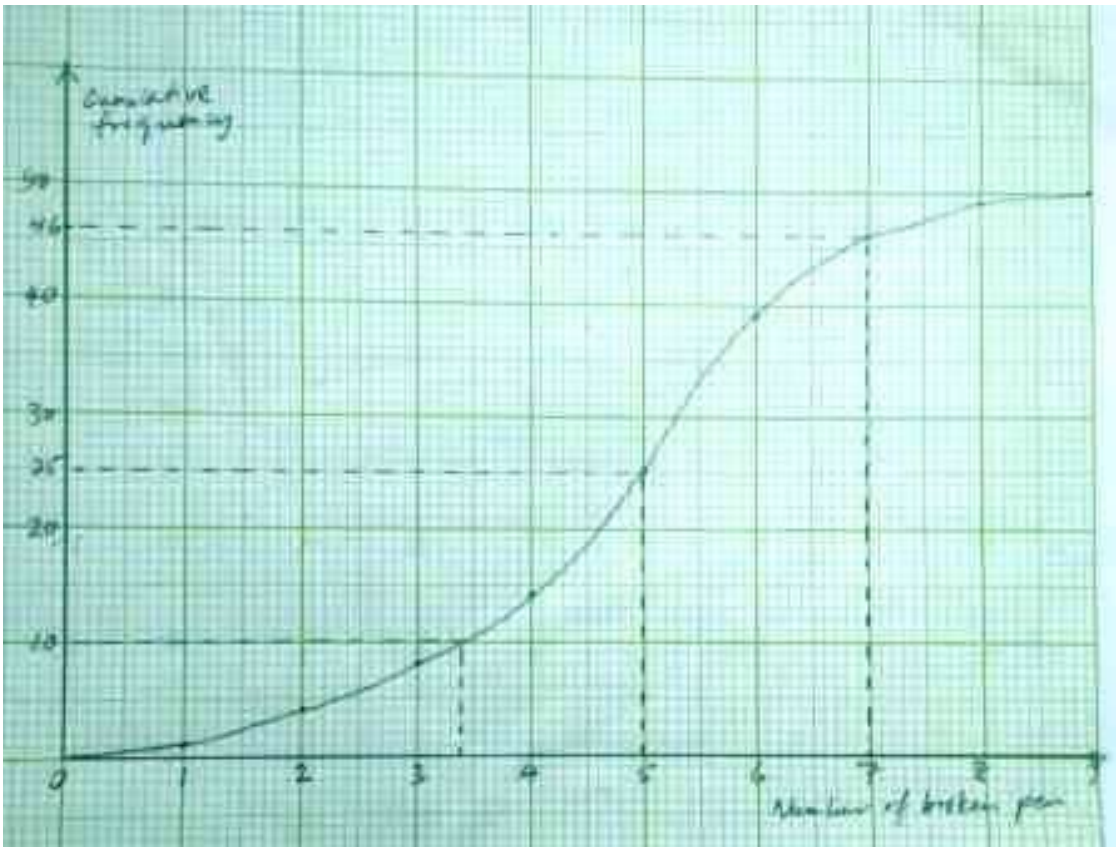
Answers :

(1) (a)



(b) (i) cumulative frequency at median = $\frac{50}{100} \times 50 = 25$

From graph, median = 5 pens.

(ii) cumulative frequency at 20th percentile = $\frac{20}{100} \times 50 = 10$

From graph, 20th percentile = 3.4 pens

(c) Number of boxes = $\frac{8}{100} \times 50 = 4$

Therefore number of broken pens = 7 or $k = 7$