

IGCSE – Estimated Mean and Histograms – 2

May 06 Paper 4

- 9 (a) The numbers 0, 1, 1, 1, 2, k , m , 6, 9, 9 are in order ($k \neq m$).
Their median is 2.5 and their mean is 3.6.

- (i) Write down the mode. [1]
 (ii) Find the value of k . [1]
 (iii) Find the value of m . [2]
 (iv) Maria chooses a number at random from the list.
 The probability of choosing this number is $\frac{1}{5}$. Which number does she choose? [1]

- (b) 100 students are given a question to answer.
The time taken (t seconds) by each student is recorded and the results are shown in the table.

t	$0 < t \leq 20$	$20 < t \leq 30$	$30 < t \leq 35$	$35 < t \leq 40$	$40 < t \leq 50$	$50 < t \leq 60$	$60 < t \leq 80$
Frequency	10	10	15	28	22	7	8

- (i) Calculate an estimate of the mean time taken. [4]
 (ii) Two students are picked at random.
 What is the probability that they both took more than 50 seconds?
 Give your answer as a fraction in its lowest terms. [3]

Answer part (c) on a sheet of graph paper.

- (c) The data in part (b) is re-grouped to give the following table.

t	$0 < t \leq 30$	$30 < t \leq 60$	$60 < t \leq 80$
Frequency	p	q	8

- (i) Write down the values of p and q . [2]
 (ii) Draw an accurate histogram to show these results.
 Use a scale of 1 cm to represent 5 seconds on the horizontal time axis.
 Use a scale of 1 cm to 0.2 units of frequency density (so that 1 cm² on your histogram represents 1 student). [4]