



Name: _____ **Date:** _____ **Score:** _____ / 31

- 1** A histogram shows the heights of 71 trees. The table gives the frequency density for each class.

Height (h m)	Frequency density
$0 < h \leq 10$	1.2
$10 < h \leq 20$	2.5
$20 < h \leq 40$	1.5
$40 < h \leq 50$	0.4

Work out the frequency for each class and check that the total is 71.

(2 marks)

Answer _____

- 2** A histogram shows the waiting times, w minutes, of 50 callers. The table gives the frequency density for each class.

Waiting time (w minutes)	Frequency density
$0 < w \leq 5$	2
$5 < w \leq 10$	4
$10 < w \leq 15$	3
$15 < w \leq 20$	1

Work out an estimate for the mean waiting time.

(3 marks)

Answer _____

- 3 A histogram shows the times, t minutes, taken by 60 pupils to travel to school. The table gives the frequency density for each class.

Time (t minutes)	Frequency density
$0 < t \leq 10$	1.8
$10 < t \leq 15$	3.2
$15 < t \leq 25$	1.4
$25 < t \leq 45$	0.6

Work out an estimate for the mean time.

(4 marks)

Answer _____

- 4 A histogram shows the masses, m kg, of parcels in a depot. There is no scale on the vertical axis, so the table gives the height of each bar in cm.

Mass (m kg)	Bar height (cm)
$0 < m \leq 2$	1.5
$2 < m \leq 4$	3
$4 < m \leq 8$	2.5
$8 < m \leq 10$	0.5

The bar for $2 < m \leq 4$ represents 18 parcels.

- Work out the frequency density that a bar of height 1 cm stands for.
- Work out an estimate for the mean mass of a parcel.

(4 marks)

Answer _____

- 5 A histogram shows the journey times, d minutes, of 50 delivery drivers. The table gives the frequency density for each class.

Time (d minutes)	Frequency density
$0 < d \leq 4$	2.5
$4 < d \leq 8$	5
$8 < d \leq 12$	3.75
$12 < d \leq 16$	1.25

- a. Work out an estimate for the mean journey time.
b. The company then looked at the 50 original times and found the exact mean was 7.4 minutes. Explain why this is different from your estimate.

(4 marks)

Answer _____

- 6 The table shows the frequency densities from a histogram of the waiting times, w minutes, of 40 callers to a helpline.

Waiting time (w minutes)	Frequency density
$0 < w \leq 4$	2
$4 < w \leq 10$	3
$10 < w \leq 12$	5
$12 < w \leq 20$	0.5

- a. Show that the histogram represents 40 callers.
b. Calculate an estimate for the mean waiting time.

(4 marks)

Answer _____

7

A histogram shows the ages, x years, of 80 members of a club. Some of the frequency densities are in the table.

Age (x years)	Frequency density
$0 < x \leq 10$	2.4
$10 < x \leq 30$	1.4
$30 < x \leq 40$	k
$40 < x \leq 60$	0.4

- Work out the value of k .
- Work out an estimate for the mean age.

(5 marks)

Answer _____

8

A histogram shows the times, t minutes, that 80 shoppers spent in a shop. The table gives the height of each bar in cm.

Time (t minutes)	Bar height (cm)
$0 < t \leq 2$	1.5
$2 < t \leq 4$	1
$4 < t \leq 8$	2
$8 < t \leq 10$	3.5

The bar for $4 < t \leq 8$ represents 32 shoppers.

- Work out the frequency of each class.
- Work out an estimate for the mean time.
- Work out an estimate for the number of shoppers who spent more than 6 minutes in the shop.

(5 marks)

Answer _____

End of questions | Total 31 marks