Averages from Tables – www.m4ths.com – Steve Blades

(1) The table below shows the number of goals scored by a football team in each game over one season.

Number of Goals Scored in a Game	Frequency
1	8
2	3
3	6
4	4

(a) Write down the modal number of goals scored per game.
(b) Find the median number of goals scored per game.
(c) Find the mean number of goals scored per game.
(d) Find the range of the number of goals scored per game.
(e) State whether the data is discrete or continuous.

(2) The table below shows the time (T minutes) it takes students complete a maths task in class 9Z.

Time Taken	Frequency
$0 < T \leq 7$	4
$P < T \leq 10$	5
$10 < T \leq Q$	3
$14 < T \leq 20$	7

(a) Explain why this is continuous grouped data.
(b) Find the values of P and Q in the table.
(c) Which is the modal category?
(d) Which category includes the median time it takes a student to complete the task?
(e) Find an estimated mean time it takes a student to do the task.
(f) Can the range of 'the time it takes a student to complete the task' be 18 minutes? Explain your answer.

(3) The table below shows the height (H) of plants in a garden.

Height of plant	Number of Plants
$0cm < H \leq 7cm$	6
$7cm < H \leq 30cm$	4
$30cm < H \leq 50cm$	8
$50cm < H \leq 100cm$	N

(a) Given that the modal height categories were $30cm < H \leq 50cm$ **AND** $50cm < H \leq 100cm$, write down the value of N.
(b) Explain why height is not a discrete measure.
(c) Find which height group the median height lies in.
(d) Find an estimated mean height of the plants.
(e) Explain why the mean height of the plants can't be 104cm
(f) Find the **maximum** range of the height of the plants given that each plant was measured using integer values.
(g) Find the **minimum** range of the height of the plants given that each plant was measured using integer values.

(4) The table below shows how many coins members of a coin club owned.

Number of Coins	Frequency	Frequency x Coins
10	3	A
11	B	55
C	6	78
15	2	D

(a) Find the values of A, B, C and D.
(b) What was the median number of coins owned by each member?
(c) Find the mean number of coins owned by each member.
(d) Two new people joined the club and the both had 16 coins and the averages were worked out again.
Would the mean increase, decrease or stay the same?
Would the median increase, decrease or stay the same?
Would the mode change?