Mean from a grouped frequency table

Maths

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Mean from a grouped frequency table

1. The times that trains are late are recorded in minutes.
Complete the table and find an estimate for the mean number of minutes a train is late.

Time	Frequency	Midpoint	Fr x MP
$0 < t \leq 5$	7	2.5	
$5 < t \leq 10$	5	7.5	
$10 < t \leq 15$	2		
$15 < t \leq 20$	1		

2. The mass of 20 vegetables is recorded in the table below.
Calculate an estimate for the mean.

Mass (grams)	Frequency
$6 < m \leq 10$	4
$10 < m \leq 14$	9
$14 < m \leq 18$	5
$18 < m \leq 22$	2

Mean from a grouped frequency table

3. Rob is working an estimate for the mean of heights of dogs from the table below. Here is his working out.

Height (cm)	Frequency	Midpoint	
$20 < h \leq 40$	2	30	60
$40 < h \leq 50$	6	45	270
$50 < h \leq 60$	4	55	220
$60 < h \leq 70$	8	65	520
		195	1070

$1070 \div 195 = 5.5$ cm

What mistake has he made?

What is the correct estimate for the mean?

4. An airline records the flight time of it's journeys for one day and records the data in the table below.

Time (Hours)	Frequency
$0 < h \leq 3$	15
$3 < h \leq 5$	11
$5 < h \leq 7$	9
$7 < h \leq 10$	5

Workout an estimate for the mean.

What percentages of flights were less than or equal to 5 hours?

Answers

Mean from a grouped frequency table

1. The times that trains are late are recorded in minutes.
Complete the table and find an estimate for the mean number of minutes a train is late.

Time	Frequency	Midpoint	Fr x MP
$0 < t \leq 5$	7	2.5	17.5
$5 < t \leq 10$	5	7.5	37.5
$10 < t \leq 15$	2	12.5	25
$15 < t \leq 20$	1	17.5	17.5
	15		97.5

97.5 ÷ 15 = 6.5 minutes

2. The mass of 20 vegetables is recorded in the table below.
Calculate an estimate for the mean.

Mass (grams)	Frequency	Midpoint	Fr x MP
$6 < m \leq 10$	4	8	32
$10 < m \leq 14$	9	12	108
$14 < m \leq 18$	5	16	80
$18 < m \leq 22$	2	20	40

260 ÷ 20 = 13 grams

Mean from a grouped frequency table

3. Rob is working an estimate for the mean of heights of dogs from the table below. Here is his working out.

Height (cm)	Frequency	Midpoint	Fr x MP
$20 < h \leq 40$	2	30	60
$40 < h \leq 50$	6	45	270
$50 < h \leq 60$	4	55	220
$60 < h \leq 70$	8	65	520
		195	1070

1070 ÷ 195 = 5.5 cm

What mistake has he made?

What is the correct estimate for the mean? Divided by the sum of mid points.

1070 ÷ 20 = 53.5 cm

4. An airline records the flight time of it's journeys for one day and records the data in the table below.

Time (Hours)	Frequency	Midpoint	Freq x MP
$0 < h \leq 3$	15	1.5	22.5
$3 < h \leq 5$	11	4	44
$5 < h \leq 7$	9	6	54
$7 < h \leq 10$	5	8.5	42.5
	40		163

Workout an estimate for the mean.

163 ÷ 40 = 4.075 hours

What percentages of flights were less than or equal to 5 hours? 65%