

# Averages From a Grouped Frequency Table



Amir asked 20 people their age in years.

12 14 13 12 14 12 15 15 12 12  
11 15 12 11 15 13 14 12 13 12

Age (years)	Tally	Frequency
11		
12		
13		
14		
15		

1. Complete the frequency table

/2

2. What is the modal age?

/1

3. What is the range of ages?

/1

4. Calculate the mean.

/3

5. A person is chosen at random. What is the probability the person is aged 11?

/2

Claire measured the height of 50 plants for her geography coursework.

Height (cm)	Frequency		
$0 \leq h < 10$	9		
$10 \leq h < 20$	23		
$20 \leq h < 40$	18		

6. Estimate the mean height of the plants.

/4

The grouped frequency table gives information about the distance 150 people travel to work.



Distance Travelled (d miles)	Frequency
$0 < d \leq 5$	34
$5 < d \leq 10$	48
$10 < d \leq 15$	26
$15 < d < 20$	18
$20 < d \leq 25$	16
$25 < d \leq 30$	8

7. Calculate the percentage of people who travel less than 20 miles to work.

/2

8. Calculate an estimate for the mean distance travelled to work by the people.

/4

Skill	Questions	Score	Available Marks
Completing a frequency table from list of data.	1		2
Mode from a frequency table.	2		1
Range from a frequency table.	3		1
Calculate the mean from a frequency table.	4		3
Probability from a frequency table.	5		2
Estimate the mean from a grouped frequency table.	6,8		8
Percentage from a grouped frequency table	7		2
	Total Marks		

# Answers



## Averages From a Grouped Frequency Table

Amir asked 20 people their age in years.

12 14 13 12 14 12 15 15 12 12  
11 15 12 11 15 13 14 12 13 12

Age (years)	Tally	Frequency	$fx$
11	II	2	$11 \times 2 = 22$
12	IIII III	8	$12 \times 8 = 96$
13	III	3	$13 \times 3 = 39$
14	III	3	$14 \times 3 = 42$
15	IIII	4	$15 \times 4 = 60$
		20	259

1. Complete the frequency table

/2

2. What is the modal age?

Mode = 12 years

/1

3. What is the range of ages?

Range =  $15 - 11 = 4$  years

/1

4. Calculate the mean.

$$\text{Mean} = \frac{259}{20} = 12.95$$

/3

So Mean age is 13 years (2 significant figures)

5. A person is chosen at random. What is the probability the person is aged 11?

$$p(\text{age } 11) = \frac{2}{20} = \frac{1}{10}$$

/2

Claire measured the height of 50 plants for her geography coursework.

Height (cm)	Frequency	MP	$fx$
$0 \leq h < 10$	9	5	45
$10 \leq h < 20$	23	15	345
$20 \leq h < 40$	18	30	540
	50		930

6. Estimate the mean height of the plants.

$$\text{Mean} = \frac{930}{50} = 18.6\text{cm}$$

/4

# Answers



The grouped frequency table gives information about the distance 150 people travel to work.

Distance Travelled (d miles)	Frequency	MP	$fx$
$0 < d \leq 5$	34	$\times$ 2.5 =	85
$5 < d \leq 10$	48	$\times$ 7.5 =	360
$10 < d \leq 15$	26	$\times$ 12.5 =	325
$15 < d < 20$	18	$\times$ 17.5 =	315
$20 < d \leq 25$	16	$\times$ 22.5 =	360
$25 < d \leq 30$	8	$\times$ 27.5 =	220
	150		1 665

7. Calculate the percentage of people who travel less than 20 miles to work.

/2

$$\text{People less than 20 miles} = 34 + 48 + 26 + 18 = 126$$

$$\frac{126}{150} \times 100 = 84\%$$

8. Calculate an estimate for the mean distance travelled to work by the people.

$$\text{Mean} = \frac{1665}{150} = 11.1 \text{ miles}$$

/4

Skill	Questions	Score	Available Marks
Completing a frequency table from list of data.	1		2
Mode from a frequency table.	2		1
Range from a frequency table.	3		1
Calculate the mean from a frequency table.	4		3
Probability from a frequency table.	5		2
Estimate the mean from a grouped frequency table.	6,8		8
Percentage from a grouped frequency table	7		2
	Total Marks		