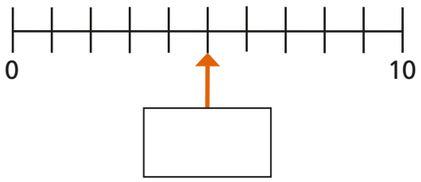
Find the mean from a grouped frequency table

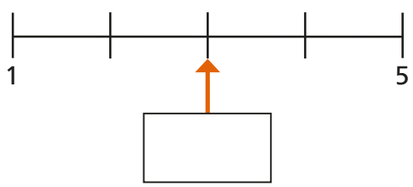
H

1 What number is at the midpoint of each number line?

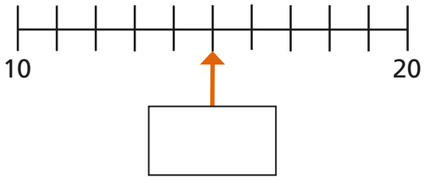
a)



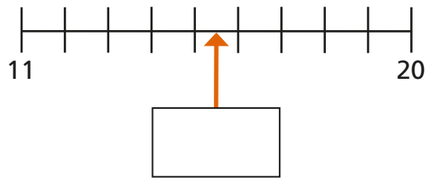
b)



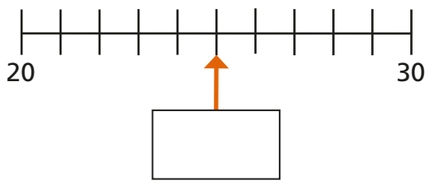
c)



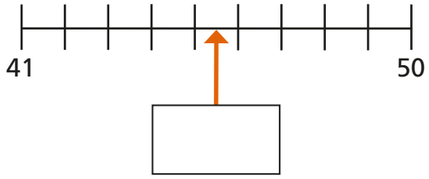
d)



e)



f)



2 Write the midpoints of the class intervals.

a) $0 \leq x < 10$ ☐

b) $1 \leq x < 10$ ☐

c) $10 \leq x < 20$ ☐

d) $11 \leq x < 20$ ☐

e) $20 \leq x < 40$ ☐

f) $21 \leq x < 40$ ☐

3 The table shows Mr Glover's monthly phone bills over two years.

Complete the table.

Phone bill, x (£)	Frequency	Midpoint	frequency × midpoint
$0 \leq x < 10$	7	5	7 × 5 = 35
$10 \leq x < 20$	9	15	9 × 15 =
$20 \leq x < 30$	5		
$30 \leq x < 40$	3		

Complete the calculation to find an estimate of the mean of his phone bills.

$$\text{estimate of mean} \approx \frac{\text{total cost}}{\text{total frequency}} = \frac{\square}{\square} = \square$$

4 The table shows information about the amount of time a group of students spent online one evening.

Complete the table.

Time online, h (hours)	Frequency	Midpoint	frequency × midpoint
$0 \leq h < 1$	2	0.5	
$1 \leq h < 2$	12		
$2 \leq h < 3$	7		
$3 \leq h < 4$	5		
$4 \leq h < 6$	4		

Complete the calculation to find an estimate of the mean time spent online.

$$\text{estimate of mean} \approx \frac{\text{total time}}{\text{total frequency}} = \frac{\square}{\square} = \square$$

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5 The table shows some information about the masses of 30 pets.

Mass, m (kg)	Frequency		
$0 \leq m < 2$	8		
$2 \leq m < 5$	4		
$5 \leq m < 10$	12		
$10 \leq m < 15$	5		
$15 \leq m < 25$	1		

a) Work out an estimate for the mean mass of the pets.

b) Write the modal class of the masses.

6 The table shows some information about the waiting times at a post office one lunchtime.

Waiting time, t (minutes)	$0 \leq t < 3$	$3 \leq t < 4$	$4 \leq t < 5$	$5 \leq t < 10$
Frequency	20	15	8	2

Work out an estimate for the mean waiting time.

7 The table shows the amount of time people took to get out of an escape room.

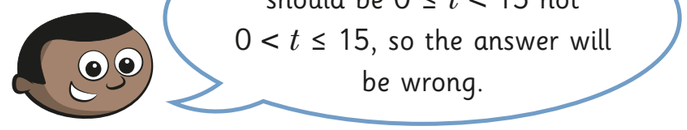
Time, t (minutes)	Frequency	Midpoint	
$0 < t \leq 15$	3		
		22.5	225
			595
	12	45	
$50 < t \leq 60$			1,100

a) Fill in any missing information in the table.

b) Write the modal class of the time taken.

c) Work out an estimate for the mean time taken.

d)



Do you agree with Mo? _____

Explain your answer.

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