Estimated mean from a grouped frequency table

Grade 4 | Foundation and Higher | 5 questions, 22 marks

GCSE Statistics topic practice

Name: _____ **Date:** _____ **Score:** _____ **/ 22**

1 A courier weighs 30 parcels. The table shows information about the mass, m kg, of each parcel.

Mass, m (kg)	Frequency, f	Midpoint, x	$f \times x$
$0 < m \leq 2$	4	1	4
$2 < m \leq 4$	10	3	
$4 < m \leq 6$	9		
$6 < m \leq 10$	7		
Total	30		

a. Complete the table. (2)

b. Work out an estimate for the mean mass of a parcel. (2)

(4 marks)

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2 The table shows the time, t minutes, that 40 employees took to travel to work one morning.

Time, t (minutes)	Frequency
$0 < t \leq 10$	6
$10 < t \leq 20$	11
$20 < t \leq 30$	14
$30 < t \leq 40$	7
$40 < t \leq 50$	2

a. Work out an estimate for the mean time. (3)

b. Explain why your answer to part (a) is only an estimate. (1)

(4 marks)

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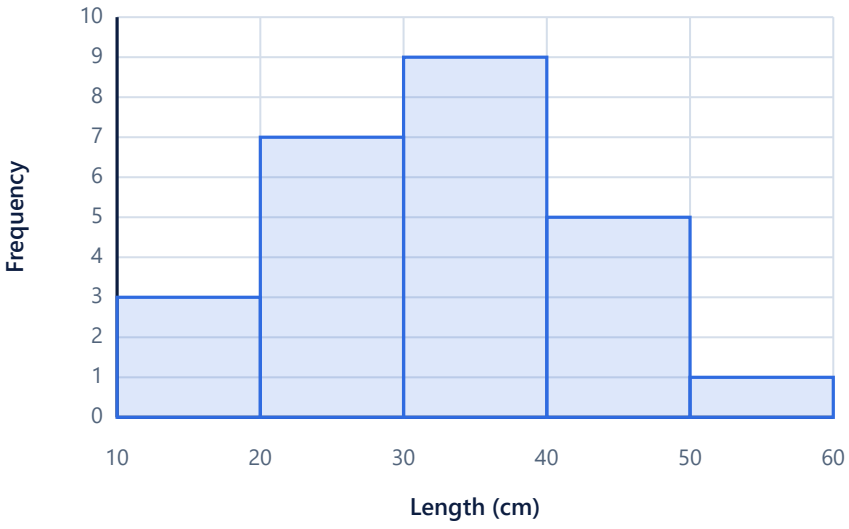
3 An angler measures the length, x cm, of each fish she catches in a week. The frequency diagram shows her results.

The first bar shows the fish with a length where $10 < x \leq 20$

a. How many fish did she catch in the week? (1)

b. Work out an estimate for the mean length of a fish. (3)

c. Write down the modal class. (1)



(5 marks)

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4 50 students recorded the time, t minutes, they spent on homework one evening.

Time, t (minutes)	Frequency
$0 < t \leq 20$	8
$20 < t \leq 40$	15
$40 < t \leq 60$	17
$60 < t \leq 80$	10

Jake works out an estimate for the mean time. Here is his working.

$(20 \times 8) + (40 \times 15) + (60 \times 17) + (80 \times 10) = 2580$

$2580 \div 50 = 51.6$ minutes

a. Describe the mistake Jake has made. (1)

b. Work out the correct estimate for the mean time. (3)

(4 marks)

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5 40 people cycle to work. The table shows information about the distance, d km, each person cycles. One frequency is missing.

Distance, d (km)	Frequency
$0 < d \leq 2$	9
$2 < d \leq 4$	13
$4 < d \leq 6$	
$6 < d \leq 10$	6
$10 < d \leq 20$	2

a. Work out the missing frequency. (1)

b. Work out an estimate for the mean distance. (3)

c. Explain how a more accurate value for the mean could be found. (1)

(5 marks)

End of questions | Total 22 marks

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