

**Estimating the Mean Mark Scheme**

<b>1</b>	$(15 \times 4) + (35 \times 28) + (45 \times 37) + (55 \times 10)$ $+ (65 \times 6) = 3645$ $4 + 28 + 37 + 10 + 6 = 85$	[2] Calculating midpoint of each class multiplied by the frequency
	$\frac{3645}{85} = 42.88 \dots \approx 43 \text{ mph}$	[1]
<b>2</b>	$(42.5 \times 12) + (47.5 \times 18) + (52.5 \times 23) + (57.5 \times 2)$ $= 2687.5$ $12 + 18 + 23 + 2 = 55$	[2] Calculating midpoint of each class multiplied by the frequency
	$\frac{2687.5}{55} = 48.86 \dots \approx 49 \text{ sweets}$	[1]
<b>3</b>	$(15 \times 15) + (32.5 \times 16) + (37.5 \times 40) + (45 \times 23)$ $= 3280$ $15 + 16 + 40 + 23 = 94$	[2] Calculating midpoint of each class multiplied by the frequency
	$\frac{3280}{94} = 34.89 \dots = 35 \text{ minutes}$	[1]
<b>4</b>	$(2.5 \times 2) + (7.5 \times 5) + (12.5 \times 8) = 142.5$ $2 + 5 + 8 = 15$	[2] Calculating midpoint of each class multiplied by the frequency
	$\frac{142.5}{15} = 9.5 \text{ }^\circ\text{C}$	[1]
<b>5(a)</b>	$(1.55 \times 12) + (1.65 \times 27) + (1.75 \times 8) + (1.85 \times 1)$ $= 79$ $12 + 27 + 8 + 1 = 48$	[2] Calculating midpoint of each class multiplied by the frequency
	$\frac{79}{48} = 1.645 \dots \approx 1.6 \text{ m}$	[1]
<b>5(b)</b>	The distribution of data within each group is unknown hence the value of the median for each group is taken and used to calculate an estimate.	[2]
<b>6(a)</b>	$10.5 < h \leq 11.0$	[1] Correct answer
<b>6(b)</b>	$(10.25 \times 17) + (10.75 \times 24) + (11.25 \times 3)$ $+ (11.75 \times 6) = 536.5$ $17 + 24 + 3 + 6 = 50$	[2] Calculating midpoint of each class multiplied by the frequency
	$\frac{536.5}{50} = 10.73 \dots \approx 10.7 \text{ cm}$	[1]

END