Exercise 2C

1 a $351 - 400$

b $$\frac{(200\times 4)+(263\times 8)+(325.5\times 18)+(375.5\times 28)+(450.5\times 7)}{65}$$
$$=\frac{800+2104+5859+10514+3153.5}{65}$$
$$=\frac{22430.5}{65}$$
$$=345.08$$

c There are 65 observations so the median is the 33rd. The 33rd observation will lie in the class 351–400.

2 a $$\frac{(67\times 1)+(72\times 4)+(77\times 6)+(82\times 6)+(87\times 8)+(92\times 4)+(97\times 1)}{30}=\frac{2470}{30}=82.3 \text{ decibels}$$

b The answer is an estimate because you don't know the exact data values.

3 a $16 < t < 18$

b

T (°C)	8-10	10-12	12-14	14-16	16-18	18-20	20-22	Σ
Frequency	1	2	4	4	10	4	5	30
Midpoint	9	11	13	15	17	19	21	
$f\,x\,m$	9	22	52	60	170	76	105	494

$\overline{T} = \frac{494}{30} = 16.5$ (2 s.f.)

4 Store A $$\frac{(20.5\times 5)+(30.5\times 16)+(40.5\times 14)+(50.5\times 22)+(60.5\times 26)+(70.5\times 14)}{97}$$
$$=\frac{4828.5}{97}=50 \text{ years}$$
Store B $$\frac{(20.5\times 4)+(30.5\times 12)+(40.5\times 10)+(50.5\times 28)+(60.5\times 25)+(70.5\times 13)}{92}$$
$$=\frac{4696}{92}=51 \text{ years}$$
Store B employs older workers but not by a great margin.