## Measures of location and spread 2B

**1 a** $351 - 400$

**b** $\dfrac{(200\times4)+(263\times8)+(325.5\times18)+(375.5\times28)+(450.5\times7)}{65}$

$=\dfrac{800+2104+5859+10514+3153.5}{65}$

$=\dfrac{22430.5}{65}$

$=345.08$

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

**2 a** $\dfrac{(67\times1)+(72\times4)+(77\times6)+(82\times6)+(87\times8)+(92\times4)+(97\times1)}{30}=\dfrac{2470}{30}=82.3$ decibels

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

**3 a** Modal class = $10 \leq t < 12$

**b** Estimate of the mean = $\dfrac{(7\times3)+(9\times7)+(11\times9)+(13\times7)+(15\times3)+(17\times2)}{31}$

$=\dfrac{353}{31}=11.4$ °C (1 d.p.)

**4** Store A $\dfrac{(20.5\times5)+(30.5\times16)+(40.5\times14)+(50.5\times22)+(60.5\times26)+(70.5\times14)}{97}$

$=\dfrac{4828.5}{97}=50$ years

Store B $\dfrac{(20.5\times4)+(30.5\times12)+(40.5\times10)+(50.5\times28)+(60.5\times25)+(70.5\times13)}{92}$

$=\dfrac{4696}{92}=51$ years

Store B employs older workers but not by a great margin.

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