2.10 (a) (i) $3 \le t < 4$ *(A1)* *(C1)*

> **Note:** Accept equivalent notation: $[3, 4)$ or $[3, 4[$.

   (ii) 3.5 *(A1)(ft)* *(C1)*

> **Note:** Follow through from part (a)(i).

   (iii) $2 \le t < 3$ *(A1)(ft)* *(C1)*

> **Note:** Follow through from part (a)(i), for consistent misuse of inequality.
> Accept equivalent notation: $[2, 3)$ or $[2, 3[$.

(b) $\dfrac{35 \times 0.5 + 30 \times 1.5 + a \times 2.5 + 52 \times 3.5 + 43 \times 4.5}{35 + 30 + a + 52 + 43} = 2.69$ *(M1)(A1)(ft)*

> **Notes:** Award *(M1)* for substitution into mean formula and equating to 2.69, *(A1)(ft)* for correct substitutions. Follow through from their mid-interval value in part (a)(ii).

   $(a =)\ 40$ *(A1)(ft)* *(C3)*

> **Note:** The final *(A1)(ft)* is awarded only if a is an integer and $35 < a < 52$.
> Follow through from part (a)(ii).

Total [6 marks]