$$
\begin{aligned}
f(x) &= \sum_{i=1}^{n} \left(y_i - (x_{1i} + x_{2i} + x_{3i} + x_{4i})\right)^2 \\
&= \sum_{i=1}^{n} \left(y_i - \sum_{k=1}^{4} x_{ki}\right)^2 \\
f(as + (1-a)t) &= \textstyle\sum_{i=1}^{n} \left(y_i - \sum_{k=1}^{4} (as_{ki} + (1-a)t_{ki})\right)^2 \\
af(s) + (1-a)f(t) &= a \sum_{i=1}^{n} \left(y_i - \sum_{k=1}^{4} s_{ki})\right)^2 + (1-a) \sum_{i=1}^{n} \left(y_i - \sum_{k=1}^{4} t_{ki})\right)^2
\end{aligned}
$$