$$\langle MSE \rangle \quad h(x') = \min \sum_{i=1}^{n} (x - x')^{2}$$

$$h'(x') = 0$$

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$$\Rightarrow \sum_{i=1}^{n} (x^{2} - 2xx' + x'^{2}) = 0$$

$$\Rightarrow \sum_{i=1}^{n} (x^{2} - 2xx' + x'^{2}) = 0$$

$$\sum_{i=1}^{n} (-2x+2x') = 0$$

$$2\sum_{i=1}^{n} x = 2\sum_{i=1}^{n} x'$$

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$$\sum_{i=1}^{n} x = n x'$$

$$\sum_{i=1}^{n} \chi = n \chi'$$

$$\Rightarrow x' = \frac{\sum_{i=1}^{n} x}{n}$$
 (average of all x) = 163.5 cm

$$\Rightarrow x' = \frac{1}{1} \text{ (average of a)}$$

$$y'(x') = \min_{x \in \mathbb{R}^{n}} \frac{x - x'}{x^{2}} y^{2} = 0$$

$$\frac{1}{n} \left( \frac{x - x'}{x} \right)^2 = 0$$

$$\langle MSPE \rangle h'(x') = min \sum_{i=1}^{n} (\frac{x-x'}{x})^2 = 0$$

$$= \min \sum_{i=1}^{n} \left( \frac{x - x'}{x} \right)^{2} = 0$$

$$= \sum_{i=1}^{n} \left( \frac{x^{2} - x'}{x^{2}} \right)^{2} = 0$$

$$\min_{i=1}^{n} \left( \frac{x^2 - 2xx' + x'^2}{x^2} \right)^2 = 0$$

$$\sum_{i=1}^{n} \left( \frac{x^2 - 2xx' + x'^2}{x^2} \right) = \sum_{i=1}^{n}$$

$$= \sum_{j=1}^{n} \left( \frac{\chi^{2} - 2\chi \chi' + \chi'^{2}}{\chi^{2}} \right) = \sum_{j=1}^{n}$$

$$h(X') = \sum_{i=1}^{n} \left( \frac{x^{2} - 2x x' + x'^{2}}{x^{2}} \right) = \sum_{i=1}^{n} \left( 1 - 2x' x^{-1} + x'^{2} x^{-2} \right)$$

$$h(x') = \sum_{i=1}^{n} \left( \frac{x^2 + 2x^2 + 2x^2}{x^2} \right) = \sum_{i=1}^{n} \left( 1 - 2x^2 + 2x^2 + 2x^2 \right) = 0$$

$$\frac{\sum_{i=1}^{n} (\chi' \chi^{-2})}{\sum_{i=1}^{n} \chi'} = \sum_{i=1}^{n} \chi^{-1}$$

$$\chi' = \sum_{i=1}^{n} \frac{1}{\chi'} + \sum_{i=1}^{n} \frac{1}{\chi^{2}}$$
 (Sigma can't combine with product

$$\chi' = \sum_{i=1}^{n} \overline{\chi} + \sum_{i=1$$

and division)