

Homework #5

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SOS40017Ex 9.4

a) For May,

$$t = 12 + (4/n)$$

$$\begin{aligned}\text{forecast, } \hat{\mu}_t &= 46.2660 + (-26.7079) \cos\left(\frac{2\pi\left(12 + \frac{4}{n}\right)}{12}\right) \\ &\quad + (-2.1697) \sin\left(\frac{2\pi\left(12 + \frac{4}{n}\right)}{12}\right) \\ &= \underline{\underline{57.7^\circ \text{F}}}\end{aligned}$$

$$\begin{aligned}\text{b) } 95\% \text{ prediction limit} &\Rightarrow 57.7^\circ \text{F} \pm (2/3.719) \\ &\Rightarrow \underline{\underline{50.3^\circ \text{F} \leq 95\% \text{ prediction limit} \leq 65.1^\circ \text{F}}}\end{aligned}$$