ECE4950 HW2 Ling Zeng lz455

Problem1 1. $P_r(M) = \frac{4}{9}$

$P_r(F) = \frac{5}{9}$

2. $\mu_{H|M} = \frac{72+68+75+64}{4} = 69.75$ in

$\mu_{S|M} = \frac{12+9+11+10.5}{4} = 10.625$

$\mu_{H|F} = \frac{65+67+62+70+64}{5} = 65.6$ in

$\mu_{S|F} = \frac{8+7.5+6+8.5+8}{5} = 7.6$

$\sigma^2_{H|M} = \frac{1}{4}\left[(72-69.75)^2+(68-69.75)^2+(75-69.75)^2+(64-69.75)^2\right]$

$= 17.1875$

$\sigma^2_{S|M} = \frac{1}{4}\left[(12-10.625)^2+(9-10.625)^2+(11-10.625)^2+(10.5-10.625)^2\right]$

$= 1.171875$

$\sigma^2_{H|F} = \frac{1}{5}\left[(65-65.6)^2+(67-65.6)^2+(62-65.6)^2+(70-65.6)^2+(64-65.6)^2\right]$

$= 7.44$

$\sigma^2_{S|F} = \frac{1}{5}\left[(8-7.6)^2+(7.5-7.6)^2+(6-7.6)^2+(8.5-7.6)^2+(8-7.6)^2\right]$

$= 0.74$