Problem 3

a). P(exactly half of selected men cannot distinguish between red and green)

$=\binom{10}{5} * 0.08^5 * 0.92^5$

b). P(exactly half of selected women cannot distinguish between red and green)

$=\binom{10}{5} * 0.3^5 * 0.7^5$

Problem 4

a). P(Y = 30) = $\frac{e^{-8.55 * 5} * (8.55 * 5)^{30}}{30!}$

b). P(Y1 = 30) = $\frac{e^{-8.55 * 0.446 * 6.02} * (8.55 * 0.446 * 6.02)^{30}}{30!}$

P(Y2 = 30) = $\frac{e^{-8.55 * 0.251 * 0.31} * (8.55 * 0.251 * 0.31)^{30}}{30!}$

P(Y3 = 30) = $\frac{e^{-8.55 * 0.118 * 0.39} * (8.55 * 0.118 * 0.39)^{30}}{30!}$