1. In a chess tournament there are 6 boys and 7 girls. Each boy plays each girl. Then each boy plays each other boy and finally each girl plays each other girl. How many chess games are played?

2. The local chicken fancier has a new hatch from the three breeds Orpingtons, Chanteclers and Salmon Faverolles. The hatch is 50% Chantecler, 40% Orpington, and 10% Salmon Faverolle. Of the Chanteclers 45% are cockerels and 55% are pullets. Of the Orpingtons 54% are cockerels and 46% are pullets and of the Salmon Faverolles 60% are cockerels and 40% are pullets. (a) Draw a tree diagram. (b) A chicken is selected at random and determined to be a pullet. Find the probability that this chicken is a Salmon Faverolle.

3. A Carnival Game consists of paying $3 to draw balls out of an Urn. The urn contains 3 red and 4 green balls. The game ends when you draw out a green ball. For each ball you’ve collected you win $1.5. (a) Find the probability distribution for your earnings. (b) Find the expected value of this game.
4. You take out a 30 year mortgage for $250,000 at 6.7% compounded monthly. (a) How much interest is paid in 29th year? (b) How much principal is paid in the 30th year?

5. Do Gaussian Elimination by hand to solve the system for \( x, y, z \).

\[
\begin{pmatrix}
3 & 6 & 3 & 6 \\
3 & 6 & 9 & 12 \\
5 & 5 & 10 & 10
\end{pmatrix}
\]

6. Farmer Jane receives an order for chickens. The order consists of buff, partridge and white chanteclers. The total number ordered is 72. The order should have 5 times more buff than partridge and white combined. Buff costs $7 per chicken, partridge $6 per chicken and white $1 per chicken. The total cost of the order is $432. How many of each type should Farmer Jane put in the order?