Problems

Suppose Leif can rake his entire yard in 2.5 hours, while his younger sister, Autumn, can do it in 4 hours by herself. How many minutes will it take the two of them to rake the entire yard if they are working together, to the nearest whole number?

Once Leif and Autumn have all of the leaves in their yard in a huge pile, they decide to do a little math with their pile of leaves. They notice that all of the leaves are yellow and/or red. So, they decide that Leif will count the leaves with any red (5550 leaves) and Autumn will count the leaves with any yellow (6820 leaves). Then, they get their other little brother, Oakie, to come out and count the leaves that have both yellow and red on them (4370 leaves). Using their reported numbers, how many leaves are in the pile?

Leif bets Autumn that she can’t reach into the middle of the pile and pull out three leaves with yellow on them in her first three picks, without replacement. Assuming the different kinds of leaves were all mixed up together again and randomly distributed throughout the pile, what is the probability that she will be successful? Express your answer as a decimal to the nearest hundredth.