

Please complete the following problems for homework. Check Mrs. Kent's website for due dates.

Homework is an independent assignment and must be completed without assistance from other students. Students may not use unauthorized assisted devices on this assignment, including but not limited to Excel or other computer software/programs/devices. A handheld calculator to assist with arithmetic may be used. All problems must show all work on this paper (or an attached paper) to receive any credit since partial credit is only available on tests or quizzes.

1. A bag contains 5 red marbles, 12 green marbles, and 3 yellow marbles. Two marbles are drawn one at a time with replacement.
 - a. Draw a tree diagram representing the possible outcomes, including probability values of each branch.
 - b. Find the probability that no green marbles are selected.
 - c. Find the probability that exactly one green marble is selected.
 - d. Find the probability that at least one green marble is selected.

2. In a two-match tennis competition between team Alpha and team Beta, the probability of team Alpha winning a match is $\frac{1}{4}$.
 - a. Draw a tree diagram representing the possible outcomes of this competition, including probability values of each branch.

 - b. Find the probability that team Alpha wins exactly one match.

 - c. Find the probability that team Alpha wins at least one match.

3. An event happens where a die is rolled and a card is drawn.
 - a. Find the probability that a number greater than 4 is rolled and a spade is drawn.

 - b. Find the probability that an even number is rolled and a face card is drawn.

 - c. Find the probability that a multiple of 5 is rolled and a Jack is drawn.