Name: _____ Period_____

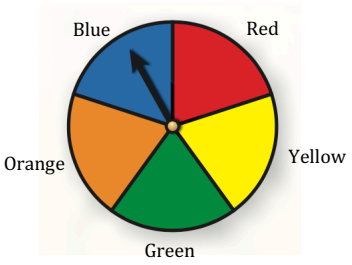
EVHS Math 2 **Unit 6 Review** **(10 Points)**

Show all work neatly organized that leads to the solution in order to receive full credit.

1 You record a high school student's grade level and whether they respond *yes*, *no*, or *maybe* to a survey question. **How many possible outcomes** are in the sample space? **List the possible outcomes**.

2 A bag contains 9 tiles, one for each letter in the word **HAPPINESS**. You can choose a tile at random. What is the probability that you choose a tile with the letter **S**? What is the probability that you choose a tile with a letter other than **E**?

3 Using the spinner below, what are the ***odds in favor*** of stopping on yellow? What are the ***odds against*** stopping on blue?



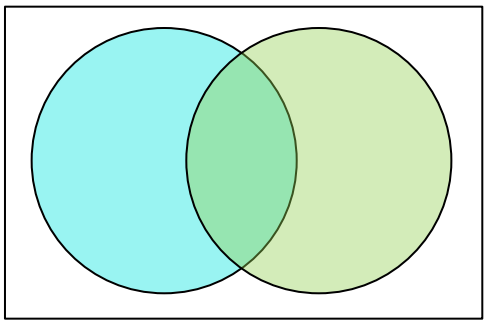
Find the probability of randomly selecting the given marbles from a bag of 5 red, 8 green, and 3 blue marbles when **(*a*)** you replace the first marble before drawing the second, and **(*b*)** you do not replace the first marble. **Compare the probabilities.**

4 Red, then Green

5 Blue, then Red

6 Green, then Green

7 You roll a 20-sided die. **Find $P(A$ and $B)$.**
Event *A*: Roll a perfect square.
Event *B*: Roll a prime number.



8 **Tell whether** the question can be answered using ***permutations*** or ***combinations***, & **EXPLAIN** you reasoning. Then answer the question.

Your band director is choosing 6 seniors to represent your band at the Band Convention. There are 48 seniors in the band. **How many groupings can the band director choose 6 seniors?**

9 Let A and B be events such that $P(A) = 0.32$, $P(B) = 0.48$, and $P(A \text{ and } B) = 0.12$. **Find $P(A$ or $B)$.**

10 Out of 100 employees at a company, 91 employees either work part time *or* work 5 days each week. There are 15 employees who work part time and 83 employees who work 5 days each week.

What is the probability that a randomly selected employee works both part time and 5 days each week?

Evaluate the expression.

11 ${}_7P_6$

12 ${}_{13}P_{10}$

13 ${}_6C_2$

14 ${}_8C_4$

15 **In how many ways can you arrange** (*a*) all of the letters and (*b*) 3 of the letters in the word **UNCLE**?

16 A random drawing will determine which 3 people in a group of 9 will win concert tickets. **What is the probability that you and your 2 friends will win the tickets**?

17 In a class of 30 students, 19 students have brown hair, 2 students have blonde hair, 2 students have red hair, and 7 students have black. hair. **Find the probability of randomly selecting a student with brown hair**.

18 Tell whether the events are ***independent*** or ***dependent***. Then **find** $P(A \text{ and } B)$.

You randomly select a card from a standard deck of 52 playing cards, and ***without replacing it***, you randomly select another card.

Event *A*: Pull a prime number.
Event *B*: Pull an face card.