Team attack 10/12/2022

1. Eleven members of the Middle School Math Club each paid the same integer amount for a guest speaker to talk about problem solving at their math club meeting. In all, they paid their guest speaker $\underline{1A2}$. What is the missing digit A of this 3-digit number?

2. Abe holds 1 green and 1 red jelly bean in his hand. Bob holds 1 green, 1 yellow, and 2 red jelly beans in his hand. Each randomly picks a jelly bean to show the other. What is the probability that the colors match?

3. If n is an integer for which the greatest common factor of n and 18 is 6 and the least common multiple of n and 9 is 126, what is the value of n?

4. The 7-digit numbers $\underline{74A52B1}$ and $\underline{326AB4C}$ are each multiples of 3. What is the largest possible value of a digit C?

5. A standard, six-sided die is rolled five times. What is the probability that the five rolls are either all the same or all different?

6. Chloé chooses a real number uniformly at random from the interval $[0, 2017]$. Independently, Laurent chooses a real number uniformly at random from the interval $[0, 4034]$. What is the probability that Laurent's number is greater than Chloé's number? (Assume they cannot be equal)

7. John inserts some number of parentheses into the expression shown to create a valid mathematical expression. What is the smallest possible integer value of John's expression?

$$1 \div 2 \div 3 \div 4 \div 5 \div 6 \div 7 \div 8 \div 9 \div 10.$$