1. $\boxed{\text{C}}$. The number of dancing partners for the boys are in a consecutive number sequence: $5, 6, 7, \ldots, g$. The sequence has a one-to-one correspondence with the number of boys at the party. Thus, $b = g - 5 + 1 = \boxed{g - 4}$.

2. $\boxed{\text{D}}$. $2n$ equally spaced radii divide the circular disk into $2n$ equal sectors. By symmetry, there are n sectors on the top half of the disk and n sectors on the bottom half of the sector. Since a secant line cuts the circle into two parts, it will be either in the top half or the bottom half of the sectors. The maximum numbers of the areas it can create is $2n$. Thus, summing the areas we have $2n + n = \boxed{3n}$.

3. $\boxed{\text{B}}$. A common mistake is to treat this problem as a full permutation of 5 bowlers. Here, for the first game, only the No. 5 and No. 4 can play. Therefore, each game will have only two outcomes. There are 4 games total being played. Thus, we have $2^4 = \boxed{16}$ possible orders.

4. $\boxed{\text{D}}$. There are 9 single digit numbers, 90 two-digit numbers. Therefore, we have $9 + 90 \times 2 = 189$ digits for numbers less than 100. Thus, $1983 - 189 = 1794$ digits from three digit numbers, which gives $1794/3 = 598$ numbers. Then, we want the last digit of the number $99 + 598 = 697$.

5. $\boxed{\text{D}}$. Play it out to see which order is not possible. In (D), when letter 4 was taken, the order of the letter must be 3, 2, 1 not 2, 3, 1.

6. $\boxed{\text{D}}$. A line is determined by 2 points. The selection of lines assumed no order. Thus, the total number of lines is a combination of selecting 2 points from 12 candidates:

$$C_2^{12} = \frac{12!}{(12-2)!(2!)} = \boxed{66}.$$

7. $\boxed{\text{E}}$. Let $a_1, a_2, \ldots, a_N$ represent the people and a_1 and a_2 did not shake hands. Then, a_1 can shake hands with the rest of the people from a_3 to a_N for a total of $\boxed{N-2}$ people.

8. $\boxed{\text{B}}$. The worst case scenario is to have selected odd number of socks for each color type. The maximum selection is 9 pairs plus 4 singles for a total of 22 socks. The next solution is assured of a pair no matter what color is selected. Thus, we have $22 + 1 = \boxed{23}$ socks.

9. $\boxed{\text{A}}$. For a given digit, it appears 1 time in whole numbers less than 10, 20 times in whole numbers less than 100, 300 times in whole numbers less than 1000 and 4000 times in whole number less than 10000. Thus, we have

$$4000 \times (0 + 1 + 2 \cdots + 9) + 1 = 4000 \times 45 + 1 = \boxed{180,001}.$$

Remark: A quick way to calculate the number of digits is to think that we have a license scheme that consists of only 4-digit numbers with digits 0 - 9. There are a total of 10^4 license numbers representing numbers ranging from 0000 to 9999. Each digit appears 1000 times in each position or 4000 times in total.