

1. How many 5-digit numbers can be formed from the set of integers $\{1,2,4,6,7,8\}$ if no integer can be used more than once? How many of these numbers will be even? How many odd?
2. In how many ways can 8 people line up at a movie theater box office?
3. There are 7 seats available in a van. In how many ways can 7 persons be seated for a journey if only 3 are able to drive? (There may be multiple ways to interpret this question.)
4. A passenger train has 9 coaches numbered 1 to 9. In how many ways can 4 people be assigned to the coaches if they must ride in different coaches?
5. In how many ways can 6 students be seated in a classroom with 30 desks? (There may be multiple interpretations of this question.)
6. There are twelve boys on the basketball team. Two can play only at center, four can play only at guard, and the rest can play only at forward. In how many ways can the coach put a starting five out on the court? (Assume that any guard can play any guard position, etc.)
7. How many numbers, each with at least three digits, can be formed from the 5 digits $\{1,2,3,4,5\}$ if no digit may be used more than once?
8. In how many ways can 5 boys and 5 girls be seated alternately in a row of 10 chairs (numbered 1 to 10), if a girl always occupies chair number one?
9. How many five digit numbers can be formed? How many of these begin with 2 and end with 4? How many do not contain the digit 5? How many are divisible by 5?