

3. Five letters, with repetition allowed, are selected from the alphabet. What is the probability that none is repeated?
5. A fair coin is tossed 5 times.
- Find the probability that exactly 3 heads appear.
  - Find the probability that no heads appear.
7. A pair of fair dice are tossed 3 times.
- Find the probability that the sum of seven appears 3 times.
  - Find the probability that a sum of 7 or 11 appears at least twice.
9. Through a mix-up on the production line, 6 defective refrigerators were shipped out with 44 good ones. If 5 are selected at random, what is the probability that all 5 are defective? What is the probability that at least 2 of them are defective?
11. What is the probability that, in a group of 3 people, at least 2 were born in the same month (disregard day and year)?

13. A box contains 100 slips of paper numbered from 1 to 100. If 3 slips are drawn in succession with replacement, what is the probability that at least 2 of them have the same number?
15. Find the approximate probability that 2 or more U.S. senators have the same birthday. (There are 100 Senators.)
17. If the five letters in the word VOWEL are rearranged, what is the probability the L will precede the E?
19. If the five letters in the word VOWEL are rearranged, what is the probability the word will begin with L?
21. A spinner has 26 equally spaced wedges, each labeled consecutively, 1, 2, 3, . . . , 26. What is the probability, from one spin, of landing on an even integer or on any of the last 19 integers?
23. A person is dealt 3 cards from a regular deck of 52 cards. What is the probability that they are all hearts, all diamonds, or all spades?
27. **Elevator Problem** An elevator starts with 5 passengers and stops at 8 floors. Find the probability that no 2 passengers leave at the same floor. Assume that all arrangements of discharging the passengers have the same probability.