

Chapter 15 Review

Directions: Complete each set of problems below.

1. How many different ways can you make combinations of 3 letters out of the five-letter word LEARN?
2. How many different ways can you make combinations of 2 numbers out of the five different single digit numbers?
3. How many different ways can you make combinations of 6 numbers out of the numbers 0 through 9?
4. How many different ways can you make combinations of 3 letters out of the seven-letter word COMBINE?
5. How many different ways can you make combinations of 5 letters out of the eight-letter word COMBINED?
6. How many diagonals can be drawn from each vertex of a pentagon?
7. How many diagonals can be drawn from each vertex of a decagon?
8. How many diagonals can be drawn from each vertex of a dodecagon (12-sided shape)?

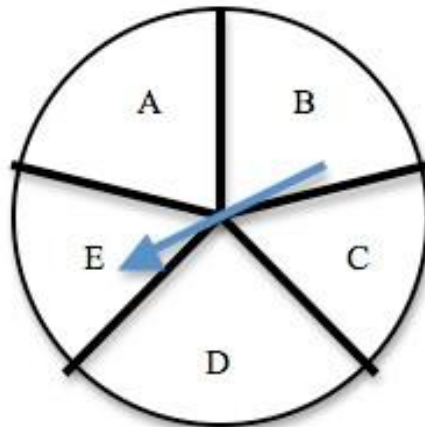
Answer the following questions about random probabilities using the combination formula and probability formulas.

9. A classroom is made up of 11 boys and 14 girls. The teacher has four main classroom responsibilities that she wants to hand out to four different students (one for each of the four students). If the teacher chooses 4 of the students at random, then what is the probability that the four students chosen to complete the responsibilities will be all boys?
10. A woman has 14 different shirts: 10 white shirts and 4 red shirts. If she randomly chooses 2 shirts to take with her on vacation, then what is the probability that she will choose two white shirts? Show your answer in fraction and percent, round to the nearest whole percent.
11. A student has written the numbers 0 through 9 each separately on 10 different index cards. If 3 cards were drawn at random, then what is the probability that the sum of all the 3 numbers on the cards would be equal to 12?

If a card is pulled from a deck of playing cards and a six-sided die is tossed, then what is the probability that the following two independent events will occur:

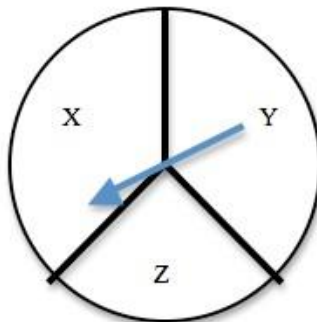
12. Rolling an 8 and drawing an even numbered card.
13. Rolling a factor of 6 and drawing a red King.

If a dice is rolled and the spinner below with 5 sides, each with the letters A, B, C, D, E is spun, then what is the probability of the following independent events occurring at the same time?



14. Spinning B and an even number.
15. Spinning a vowel and not rolling an even number.

Identical dials are spun, each dial contains X, Y, and Z. What is the probability that:



16. 6 identical spinners would not land on Z? Round your answer to the nearest whole percent.
17. 8 identical spinners would not land on Y? Round your answer to the nearest whole percent.

A dealer holds a shuffled deck of 52 playing cards and draws cards at random. Determine the probability that the following events would occur, without replacement.

18. The first card dealt is the king of clubs and the second card dealt is the queen of clubs.

19. The first three cards are hearts.

20. 6 different numbers are drawn on separately on 11 different cards, one number on each card. There is one 1, three 2's, two 3's, three 4's, one 5, and one 6. 3 cards are drawn in a row with replacement. What is the probability that they are all 6's?