

1. The Jones' are in the process of decorating their guest room. They want to paper a wall, paint the others and carpet the room. At the moment they have 6 possible wall paper patterns, 7 paint colors and 4 carpet types. How many different decorating choices can be made?

2. Jerry wants to use the digits 1,2,3 and 4 for her personal banking ID number (PIN number). If repetitions are allowed, then how many different 4 digit numbers can she create?
 - b. In how many different ways can Jerry choose her 4 digit number if repetitions are not allowed (using 1,2,3,4)?

3. School ID numbers are made up using one letter followed by any 2 digits. How many students could be assigned different ID numbers?
 - a. 2600
 - b. 2340
 - c. 2106
 - d. 520
 - e. None of the above

Show your work....

4. A jar contains 5 red marbles and 6 yellow ones. One marble is drawn from the jar at random. What is the probability that the marble drawn is yellow?
 - b. If two marbles are drawn at random, one after the other, without replacing the first, then what is the probability of drawing 2 yellow marbles?

 - c. If two marbles are drawn at random, one after the other, with the first replaced into the jar before the second is drawn, then what is the probability of drawing a red marble and then a yellow marble?

Answer Key

1. The Jones' are in the process of decorating their guest room. They want to paper a wall, paint the others and carpet the room. At the moment they have 6 possible wall paper patterns, 7 paint colors and 4 carpet types. How many different decorating choices can be made?

$$6 \times 7 \times 4 = \underline{168}$$

2. Jerry wants to use the digits 1,2,3 and 4 for her personal banking ID number (PIN number). If repetitions are allowed, then how many different 4 digit numbers can she create?

$$4 \times 4 \times 4 \times 4 = \underline{256}$$

- b. In how many different ways can Jerry choose her 4 digit number if repetitions are not allowed (using 1,2,3,4)?

$$4 \times 3 \times 2 \times 1 = \underline{24}$$

3. School ID numbers are made up using one letter followed by any 2 digits. How many students could be assigned different ID numbers?
- a. 2600
 - b. 2340
 - c. 2106
 - d. 520
 - e. None of the above

Show your work....

$$26 \times 10 \times 10 = 2600$$

4. A jar contains 5 red marbles and 6 yellow ones. One marble is drawn from the jar at random. What is the probability that the marble drawn is yellow?

$$P(Y) = 6/11 = \underline{0.54}$$

- b. If two marbles are drawn at random, one after the other, without replacing the first, then what is the probability of drawing 2 yellow marbles?

$$P(2Y) = 6/11 * 5/10 = 3/11 = \underline{0.27}$$

- c. If two marbles are drawn at random, one after the other, with the first replaced into the jar before the second is drawn, then what is the probability of drawing a red marble and then a yellow marble?

$$P(RY) = 5/11 * 6/11 = 30/121 = \underline{0.25}$$