

Sample Spaces and the Counting Principle

Represent the sample space using set notation.

- 1) An ice cream stand offers four flavors: strawberry, chocolate, vanilla, and mint chocolate chip.
- 2) A bagel shop has two types of bagels: plain and onion.
- 3) A jewelry store sells rings with either a ruby, sapphire, or emerald gemstone.
- 4) A bag contains two red marbles and three blue marbles. You randomly pick a marble.
- 5) A basket contains one apple, one peach, and one orange. You randomly pick a piece of fruit to eat. Then you pick another piece to eat later.
- 6) A coffee shop offers small, medium, and large sizes. Customers can choose between French roast, Italian roast, and American roast.

Find the number of possible outcomes in the sample space.

- 7) The chess club must decide when and where to meet for a practice. The possible days are Tuesday, Wednesday, or Thursday. The possible times are 3, 4, or 5 p.m. There are ten classrooms available.
- 8) A padlock's combination is four digits long.
- 9) A basketball player attempts five free throws. Each attempt results in a score or a miss.
- 10) A math quiz has five multiple choice questions. Each question has four options: A, B, C, and D.

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- 4) A bag contains two red marbles and three blue marbles. You randomly pick a marble.
 $\{\text{red}_1, \text{red}_2, \text{blue}_1, \text{blue}_2, \text{blue}_3\}$
- 5) A basket contains one apple, one peach, and one orange. You randomly pick a piece of fruit to eat. Then you pick another piece to eat later.
 $\{(A, P), (A, O), (P, A), (P, O), (O, A), (O, P)\}$
- 6) A coffee shop offers small, medium, and large sizes. Customers can choose between French roast, Italian roast, and American roast.
 $\{(S, F), (S, I), (S, A), (M, F), (M, I), (M, A), (L, F), (L, I), (L, A)\}$

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90
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10000
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32
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