

**Lesson 8-3**      **Reading in the Content Area****Main Idea**

1. Mark the *main idea* with an *M*.  
Mark the statement that is *too broad* with a *B*.  
Mark the statement that is *too narrow* with an *N*.

- \_\_\_\_\_ Permutations and combinations belong to the mathematical branch known as combinatorics.  
\_\_\_\_\_ With 31 ice cream flavors and three-scoop cones with three different flavors, there are 26, 970 combinations if order is important.  
\_\_\_\_\_ The number of possible arrangements of objects depends upon if the order of the objects is important.

**Subject Matter**

2. This lesson is mainly about how to \_\_\_\_\_
- model outcomes of an event with a tree diagram.
  - find the number of permutations of objects.
  - prepare random samples.
  - show ways that game pieces can be chosen.

**Supporting Details**

3. To find the value of  $P(8,3)$ , you should \_\_\_\_\_
- multiply  $8 \times 7 \times 6$ .
  - multiply  $8 \times 3$ .
  - multiply  $8 \times 7 \times 6 \times 5 \times 4 \times 3 \times 2 \times 1$ .
  - add  $8 + 3$ .

**Conclusion**

4. To determine the number of ways that a group of 10 runners could place first, second, or third place in a race, you should \_\_\_\_\_
- add  $10 + 9 + 8$ .
  - multiply  $10 \times 3$ .
  - multiply  $10 \times 9 \times 8$ .
  - divide the number of runners by the number of places.

**Clarifying Details**

5. The symbol  $n!$  means \_\_\_\_\_
- the sum of all counting numbers from 1 through  $n$ .
  - the sum of  $n$  and how many objects taken at a time.
  - the product of  $n$  and how many objects taken at a time.
  - the product of all counting numbers from 1 through  $n$ .

**Vocabulary in Context**

6. *Probability* means \_\_\_\_\_
- an arrangement of objects.
  - a ratio of the number of ways a certain event can occur to the number of possible outcomes.
  - an event that will certainly happen.
  - a ratio that indicates an event that is not very likely to happen.