

**Geometry | LESSON 15-3****Practice Form G**

1. 6
2. 12 choices
3. 120 orders
4. 5040
5. 25
6. 10 combinations
7. 120
8. 56
9. 35
10.  $\frac{1}{6}$
11.  $\frac{1}{35}$
12. 27
13. Answers will vary. Sample: There are 4 people in a race. There are 4 possible first-place finishers. Once the first place finisher is determined, there are 3 possible 2nd-place, etc. So the number of orders is  $4 \cdot 3 \cdot 2 \cdot 1 = 4! = 24$ . For a race with  $n$  people, there are  $n!$  possible orders of finishing.
14. Each time the hiker adds a shirt to his collection, 4 additional combinations are possible. The initial number of combinations is  $2 \cdot 3 \cdot 2 = 12$ . When another shirt is added, the number of combinations becomes  $2 \cdot 4 \cdot 2 = 16$ .
15. 504 ways
16. A tree diagram lists options of each type in columns, and links each type of option to show outcomes. The Fundamental Counting Principle uses numbers only. The numbers of options in each column of a tree diagram are multiplied, yielding the number of possible outcomes.
17.  $\frac{1}{8568}$