

## Practice 12-4 Counting Outcomes and Theoretical Probability

A computer store sells 4 models of a computer (m1, m2, m3, and m4). Each model can be fitted with 3 sizes of hard drive (A, B, and C).

1. Find the sample space.  
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2. What is the probability of choosing a computer with a size C hard drive at random?  
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3. What is the probability of choosing a model 2 computer with a size A hard drive at random?  
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Solve each problem by drawing a tree diagram.

4. A ballot offered 3 choices for president (A, B, C) and 2 choices for vice president (M, N). How many choices for a combination of the two offices did it offer? List them.  
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5. The Cougar baseball team has 4 pitchers (P1, P2, P3, P4) and 2 catchers (C1, C2). How many pitcher-catcher combinations are possible? List them.  
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Solve each problem by using the counting principle.

6. There are 5 roads from Allen to Baker, 7 roads from Baker to Carlson, and 4 roads from Carlson to Dodge. How many different routes from Allen to Dodge by way of Baker and Carlson are possible?  
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7. Drapery is sold in 4 different fabrics. Each fabric comes in 13 different patterns. Each pattern is offered in 9 different colors. How many fabric-pattern-color combinations are there?  
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