

Practice B

For use with pages 701–707

Each event can occur in the given number of ways. Find the number of ways all of the events can occur.

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| 1. Event 1: 3 ways, Event 2: 4 ways | 2. Event 1: 1 way, Event 2: 5 ways |
| 3. Event 1: 4 ways, Event 2: 6 ways
Event 3: 2 ways | 4. Event 1: 2 ways, Event 2: 9 ways,
Event 3: 5 ways |

For the given configuration, determine how many different computer passwords are possible if (a) digits and letters can be repeated, and (b) digits and letters cannot be repeated.

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| 5. 2 letters followed by 4 digits | 6. 1 letter followed by 5 digits |
| 7. 3 digits followed by 3 letters | 8. 1 digit followed by 5 letters |

Evaluate the factorial.

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| 9. $6!$ | 10. $13!$ | 11. $0!$ | 12. $15!$ |
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Find the number of permutations.

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| 13. ${}_{10}P_8$ | 14. ${}_5P_0$ | 15. ${}_6P_1$ | 16. ${}_6P_6$ |
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Find the number of distinguishable permutations of the letters in the word.

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| 17. ENGLISH | 18. NORTH | 19. MATH | 20. BELL |
| 21. EYE | 22. ALPHABET | 23. OKLAHOMA | 24. CALIFORNIA |

25. **School Lunch** Your school cafeteria offers three salads, four main courses, two vegetables, and three desserts. How many different lunches consisting of a salad, main course, a vegetable, and dessert are possible?
26. **Stacking Books** Five books are taken from a shelf and laid in a stack on a table. In how many different orders can the books be stacked?
27. **Batting Order** A baseball coach is determining the batting order for the team. The team has nine members, but the coach does not want the pitcher to be one of the first four to bat. How many batting orders are possible?
28. **Scheduling Classes** Next year you are taking math, English, history, keyboarding, chemistry, physics, and physical education. Each class is offered during each of the seven periods in the day. In how many different orders can you schedule your classes?