



**Practice**

**11.1 B Permutations**

Find the number of permutations of the first 7 letters of the alphabet for each situation.

1. taking all 7 letters at a time

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2. taking 5 letters at a time

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3. taking 4 letters at a time

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4. taking 3 letters at a time

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In how many ways can 12 books be displayed on a shelf if the given number of books are available?

5. 12 books

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6. 14 books

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7. 15 books

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8. 20 books

\_\_\_\_\_

Find the number of permutations of the letters in each word.

9. *geometry*

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10. *algebra*

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11. *addition*

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12. *calculus*

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13. *mathematics*

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14. *arithmetic*

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15. Lizette decorates windows for a department store. She plans to design a baby's room with a row of stuffed elephants and monkeys along one wall. If she has 8 identical elephants and 10 identical monkeys, in how many different ways can the stuffed animals be displayed?

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16. The 6 candidates for a student government office are invited to speak at an election forum. In how many different orders can they speak?

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17. Representatives from 8 schools are represented at a school newspaper workshop. In how many different ways can the 8 representatives be seated around a circular table?

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18. Ten colleges are participating in a college fair. Booths will be positioned along one wall of a high school gymnasium. In how many different orders can the booths be arranged?

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