

Comprehensive Review #4

Topics:

Lesson 38 - Fundamental Counting Principle and Permutations

Lesson 75 - Combinations

Lesson 77 - Binomial Expansions

Lesson 99 - Advanced Sequence Problems

1. A quiz has 4 multiple choice questions. If each question has 3 choices, how many outcomes are possible?
[A] 12 outcomes [B] 27 outcomes [C] 64 outcomes [D] 81 outcomes
2. A quiz has 5 multiple choice questions. If each question has 4 choices, how many outcomes are possible?
[A] 1,024 outcomes [B] 256 outcomes [C] 625 outcomes [D] 20 outcomes
3. How many ways can five committee members be selected from ten club members?
4. How many ways can seven committee members be selected from nine club members?
5. 3 yoyos are to be selected from a group of 9. In how many ways can this be done?
[A] 504 [B] 522 [C] 84 [D] 60,480
6. 2 pennants are to be selected from a group of 9. In how many ways can this be done?
[A] 570 [B] 181,440 [C] 72 [D] 36
7. Write all seven terms of $(b + c)^6$.

8. Write the 4th term of $(x + y)^4$.
9. Write the 5th term of $(x + y)^8$.
10. Write the 5th term of $(x + y)^9$.
11. Expand: $(p + q)^5$. Which one of the following is a term in the answer?
[A] $5p^2q^3$ [B] $20p^2q^3$ [C] $15p^2q^3$ [D] $10p^2q^3$
12. Expand: $(j + k)^6$. Which one of the following is a term in the answer?
[A] $15j^3k^3$ [B] $10j^3k^3$ [C] $5j^3k^3$ [D] $20j^3k^3$
13. A rubber ball dropped from a height of 108 feet. After each bounce it rebounds two thirds of the distance it fell. How far does the ball fall on its third fall?
[A] 96 feet [B] 144 feet [C] 48 feet [D] 49 feet
14. A rubber ball dropped from a height of 768 inches. After each bounce it rebounds one fourth of the distance it fell. How far does the ball fall on its fourth fall?
[A] 13 inches [B] 36 inches [C] 12 inches [D] 24 inches
15. A rubber ball dropped from a height of 250 inches. After each bounce it rebounds one fifth of the distance it fell. How far does the ball fall on its third fall?
[A] 20 inches [B] 10 inches [C] 11 inches [D] 30 inches