

Foundations of Math 12 LG 9-10

Methods of Counting



INTRODUCTION:

Counting objects is important in determining chances and probabilities of an event occurring. Objects can be arranged in different ways which means a solution hides behind each different arrangement. This guide will introduce you to the different concepts around counting objects and their arrangements.



LEARNING GUIDE EXPECTATIONS:

On the completion of this learning guide you will be able to:

- 1) solve problems with the Fundamental Counting Principle.
- 2) solve problems involving permutations.
- 3) solve problems involving combinations.



EVALUATION:

Complete the LG 9-10 quiz.



RESOURCES NEEDED:



Foundations of Mathematics 12 Text.

LEARNING ACTIVITIES:



Expectation #1: Solve problems with the Fundamental Counting Principle.



1. [Watch and take notes on instructional video on the Fundamental Counting Principle.](#)



2. In the Foundations of Mathematics 12 text, in Section 4.1 work through Examples 1-3 on pages 230-233.
3. Read "In Summary" on page 234.
4. Complete #2, 4, 5, 6, 9, 10, 11, 12, 15, 16, 18 on pages 235-237.



Expectation #2: Solve problems involving permutations.



1. [Watch and take notes on instructional video on Permutations.](#)



2. In the Foundations of Mathematics 12 text, in Section 4.2 read the definition of permutation on page 238 and then work through Examples 1-4 on pages 238-242.
3. Read “In Summary” on page 243.
4. Complete #1, 3, 5, 6, 7, 8, 11, 12, 13, 14, 18 on pages 243-245.

5. In Section 4.3, work through Examples 1, 3, 4, 5 on pages 247-253.
6. Read “In Summary” on page 254.
7. Complete #1, 5, 6, 7, 9, 10, 11, 13, 15, 16, 19 on pages 255-257.

8. In Section 4.4, work through Examples 1-3 on pages 262-265.
9. Read “In Summary” on page 266.
10. Complete #1, 2, 4, 5, 6, 9, 11, 12, 15, 17, 20 on pages 266-269.



Expectation #3: Solve problems involving combinations.



1. [Watch and take notes on instructional video on Combinations.](#)



2. In the Foundations of Mathematics 12 text, in Section 4.5 read the definition of “combination” on page 271 and the read “In Summary” on page 272.
3. Complete #2, 3 on page 272.

4. In Section 4.6, read “Communication-Notation” on the bottom of page 274 and then work through Examples 2-4 on pages 275-278.
5. Read “In Summary” on page 279.
6. Complete #1, 3, 4, 5, 6, 7, 8, 9, 11, 14, 15, 18 on pages 280-282.

7. In Section 4.7, work through Examples 1-3 on pages 284-287.
8. Read “In Summary” on page 287.
9. Complete #1, 2, 4, 5, 6, 9, 10, 12, 13, 14 and 18 on pages 288-290.

REVIEW

Now that you have completed some practice questions, you could review by doing any of the following:

- Chapter Self-Test on page 291.
- Practicing on pages 293-294.
- LG 9-10 practice quizzes located [here](#).

Once you are ready, email your teacher for the LG 9-10 quiz.