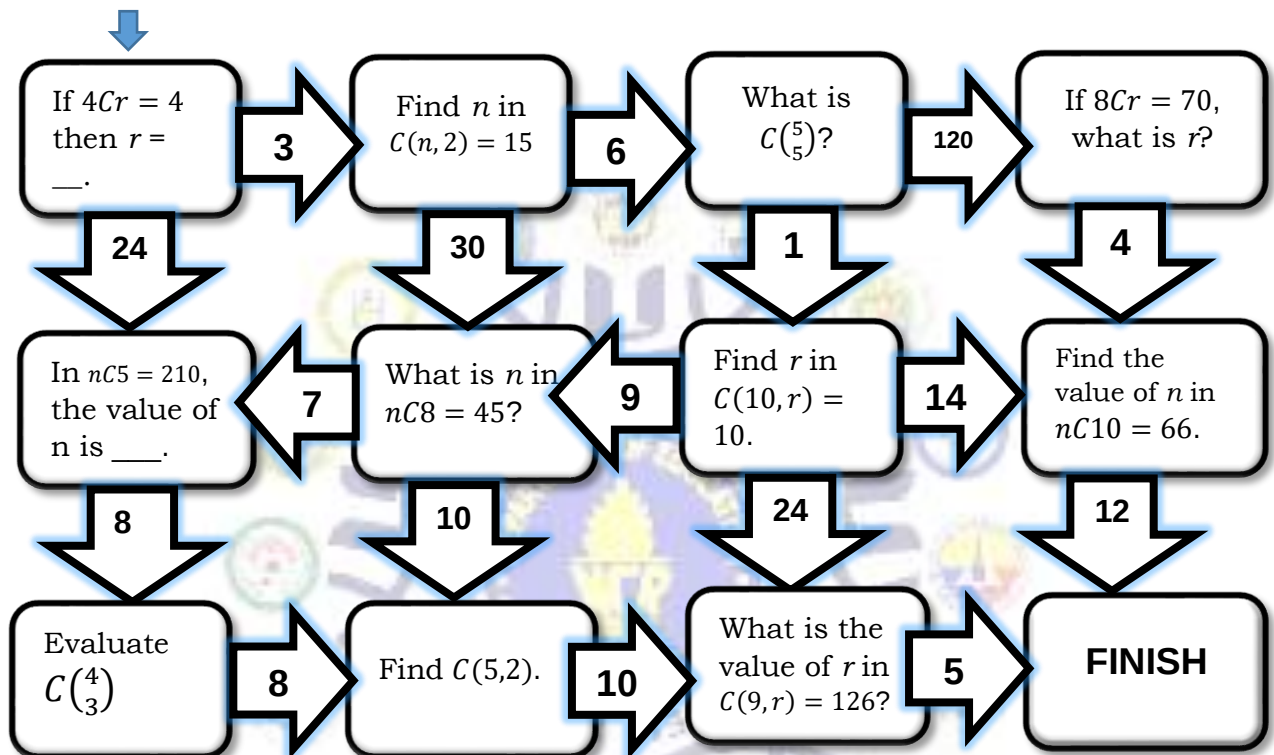


Name: _____ Date: _____ Rating/Score: _____

A. COMBI MAZE

Directions: Find your way out of the Combination Maze. Solve the given expressions. Follow the correct path by choosing the correct answer inside the arrows.

Start Here!**B. PERMUTATION or COMBINATION?**

Direction: Determine if the situation is a permutation or a combination.

1. Selecting 3 vowels in an alphabet.
2. Opening a combination lock.
3. Classroom seating arrangement.
4. Winning a Lotto numbers.
5. Four-digit numbers divisible by 10 that can be formed from numbers 2, 5, 6, 8, 9, and 0 such that no number repeats.
6. Setting up a 6-digit ATM pin.
7. Arranging guests in a round table.
8. Grouping 100 learners with 5 members each group.
9. Determining the top 10 in a class.
10. Selecting 3 letters in the word MISSISSIPPI.

Quarter 3 Week: 5**Competencies:** Solving Problems Involving Permutation and Combination M10SP-III-d-e-1**Notes to teachers:** This material serves as summative assessment.**(This is a Government Property. Not For Sale.)**

C. NUMBER OF DIGITS PROBLEMS

Directions: Solve each problem. Show your solution following the Fundamental Counting Principle. Write your answer in the second column.

Word Problems	Answer
1. How many 2-digit numbers can be formed from even-numbered digits if repetition of the digit is not allowed?	
2. Digits 1, 2, 3, and 4 are given. How many 4-digit numbers can be formed when the repetition of the digit is allowed?	
3. How many unique 4-digit numbers greater than 5000 can be formed using the odd-numbered digits?	
4. How many numbers less than 100 can be formed using only even-numbered digits, and repetition of the digit is allowed?	
5. How many 4-digit odd numbers can be formed using the digits 0, 1, 2, and 3 only if the repetition of the digit is not allowed?	

D. THE SHELF

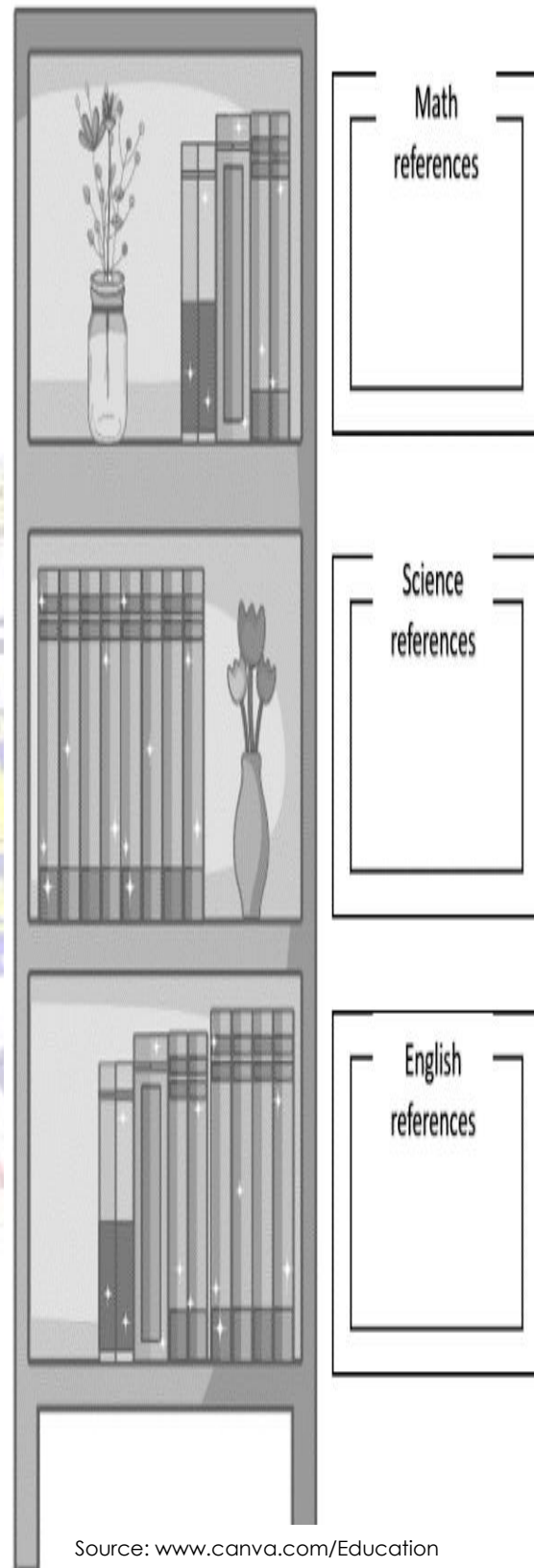
Directions: Read and solve the problem involving combination. Write your answer in the box beside each row of the bookshelf. Show your solution under each number.

Jacob is a librarian. He has a three-layer bookshelf for references in the school library. The top layer is for Math references (distinct books in Geometry, Trigonometry and Statistics), the middle layer is for Science references (distinct books in Biology, Chemistry and Earth Science) and the bottom layer is for English references (distinct books in Literature and Linguistics). He wants to know the number of arrangements of his books per layer.

1. If there are 4 Geometry books, 2 Trigonometry books, and 1 Statistics book, how many ways can he arrange the top layer of the shelf?

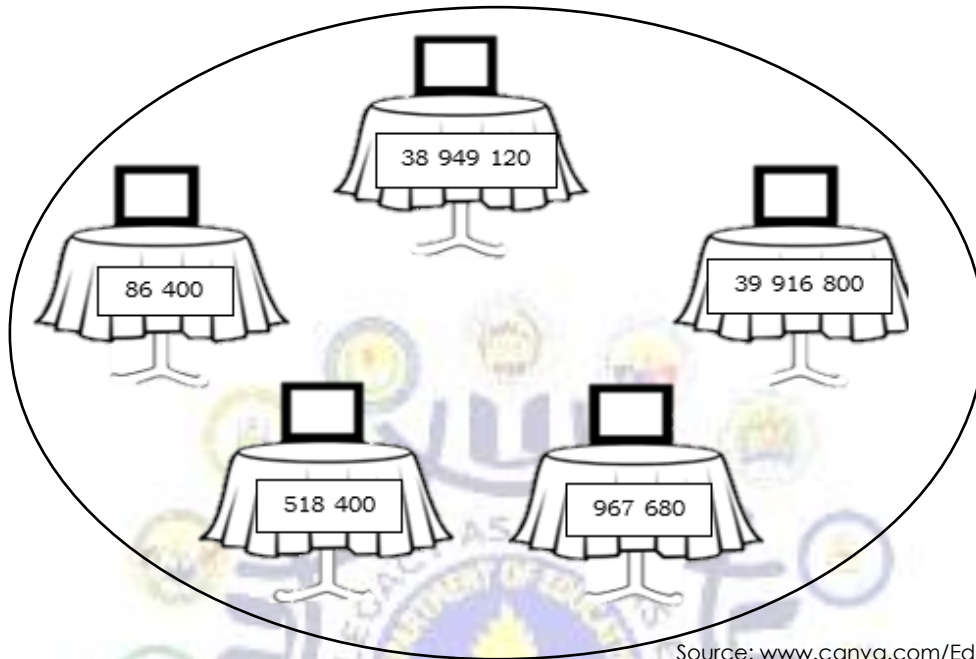
2. If there are 5 Biology books, 4 Chemistry books, and 2 Earth Science books, how many ways can he arrange the middle layer?

3. If there are 8 Literature books and 2 books in Linguistics, how many ways can he arrange the bottom layer?



E. ROUND TABLE

Directions: Solve each problem involving circular permutation. Write the item number in the box above each table that corresponds to the correct answer.



Source: www.canva.com/Education

For items no. 1-5

Janna celebrates her 18th birthday. She invited 11 of her closest friends (6 boys and 5 girls). Find the number of arrangements with the following restrictions.

- ☐ 1. They are all seated at the round table.
- ☐ 2. Boys and girls are seated alternately.
- ☐ 3. All boys sit together.
- ☐ 4. Four boys must sit together.
- ☐ 5. Four boys must not sit together.

Quarter 3 Week: 5

Competencies: Solving Problems Involving Permutation and Combination M10SP-IIIId-e-1

Notes to teachers: This material serves as summative assessment.

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