

LEARNING ACTIVITY SHEET**GRADE 10 Mathematics**

Name: _____

Date: _____

Rating Score: _____

Activity 1: The Best Among The Rest!

Directions: Read each item carefully. Write down the letter that corresponds to the correct answer before the number.

- ____ 1. It is an example of choosing a subset of a set.
A. Combination B. Differentiation C. Integration D. Permutation
- ____ 2. Which of the following situation does NOT illustrate combination?
A. Selecting 2 songs from 10 choices for an audition piece.
B. Fixing the schedule of a group of students who must take exactly 8 subjects.
C. Enumerating the subsets of a set
D. Identifying the lines formed by connecting some given points on a plane
- ____ 3. Evaluate: 7C_4 .
A. 5 B. 15 C. 25 D. 35
- ____ 4. In how many ways can a 5 men committee be formed from 9 people?
A. 126 B. 96 C. 20 D. 81
- ____ 5. What is the value of n if ${}_nC_3 = 56$?
A. n=7 B. n= 8 C. n= 9 D. n= 10
- ____ 6. If $C(10,r) = 45$, then what is the value of r?
A. r=1 B. r=2 C. r= 3 D. r=4
- ____ 7. Evaluate: $C(n,n)$
A. n C. 1
B. r D. cannot be determined
- ____ 8. If $C(12,r) = 792$, which of the following is a possible value of r?
A. 8 B. 7 C. 6 D. 4
- ____ 9. What should be the value of n when $C(18,14) = C(n,4)$?
A. 18 B. 4 C. 314 D. 6
- ____ 10. If ${}_{12}C_4$ is equal to ${}_{12}C_r$, what is the value of r?
A. 6 B. 8 C. 10 D. 12
- ____ 11. Which of the following is the formula for ${}_nC_r$?
A. $\frac{n!}{(n-r)!r!}$ B. $\frac{n!}{(n-r)!}$ C. $\frac{n!r!}{(n-r)!}$ D. $\frac{n!}{r!}$
- ____ 12. Evaluate: $C(6,5) * C(5,2)$
A. 52 B. 60 C. 65 D. 70
- ____ 13. For what value of n will the equation ${}_nC_2 = 21$, be satisfied?
A. 7 B. 8 C. 9 D. 6
- ____ 14. How many combinations are there of the set {A,B,C,D} taken 3 at a time?
A. 1 B. 2 C. 3 D. 4
- ____ 15. Simplify $C(7,3) = \frac{7!}{4!3!}$
A. 15 B. 20 C. 25 D. 35
- ____ 16. How many committees of four members can be formed from ten lawyers?
A. 102 B. 120 C. 201 D. 210

Specific Week: Week 3 and 4**Target Competency:** Illustrates the combinations of objects (M10SPIIIc-1) and solves problems involving combinations (M10SPIII d-e-1)**Note to the Teacher:** This LAS is designed to develop the students' comprehension and understanding and think deeper about combinations, apply their knowledge in formulating conclusions and make wise decisions in solving problems. You may refer your students to LM pages 301-309

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- ____ 17. How many committees of five with two lawyers and three accountants be formed from a selection of six lawyers and eight accountants?
A. 408 B. 804 C. 840 D. 480
- ____ 18. How many different pairs of cards can be chosen from the five cards in a royal flush?
A. 5 B. 10 C. 18 D. 20
- ____ 19. Mrs. Rey asked Jun to draw all the diagonals of a certain polygon on the board. Jun was able to draw 27 diagonals which his teacher declared correct. What was the given polygon?
A. pentagon B. hexagon C. nonagon D. decagon
- ____ 20. In a gathering, each of the guests shook hands with everybody else. If a total of 378 handshakes were made, how many guests were there?
A. 23 B. 25 C. 28 D. 30
- ____ 21. In a room, there are 10 chairs in a row. In how many ways can 5 students be seated in consecutive chairs?
A. 120 B. 252 C. 600 D. 720
- ____ 22. A caterer offers 3 kinds of soup, 7 kinds of main dish, 4 kinds of vegetable dish and 4 kinds of dessert. In how many possible ways can a caterer form a meal consisting of 1 soup, 2 main dishes, 1 vegetable dish and 2 desserts?
A. 150 B. 336 C. 672 D. 1512
- ____ 23. The Voice Band have 30 songs that they perform in concert. At the upcoming Battle of the bands, they will play 2 songs. In how many different orders could they perform 2 of their songs?
A. 870 B. 380 C. 87 D. 4
- For # 24-25: In how many ways can a committee be selected from 18 persons if the committee is to have:
- ____ 24. 3 members?
A. 816 B. 3060 C. 15 D. 11550
- ____ 25. 14 members?
A. 816 B. 3060 C. 15 D. 11550
- ____ 26. How many different committees consisting of 8 people can be formed from 12 men and 9 women if equal numbers of men and women have to be chosen?
A. 62370 B. 4455 C. 495 D. 126
- ____ 27. Mario wins if the six different numbers that he has chosen from the numbers 1 up to 42, regardless of the order were drawn. In how many different bets can Mario win?
A. 28,989 possible winning bets C. 8,145,060 possible winning bets
B. 5,245,786 possible winning bets D. 40,475,358 possible winning bets
- ____ 28. If there are 12 teams in a basketball tournament and each team must play every other team in the eliminations, how many elimination games will there be?
A. 66 B. 252 C. 126 D. 56

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- ____ 29. In how many ways can a committee of 7 students be chosen from 9 juniors and 9 seniors if there must be 4 seniors in the committee?
 A. 10584 B. 1764 C. 210 D. 84
- ____ 30. In how many ways can 5 prizes be distributed among 4 boys when every boy can take one?
 A. 1024 B. 625 C. 600 D. 120

Activity 2: Are You Satisfy?

A. For what value of n will the following equations be satisfied? Write your answer in the blank.

1. ${}_nC_2 = 21$, $n =$ _____

2. ${}_nC_3 = 165$, $n =$ _____

3. $C(n, 3) = 364$, $n =$ _____

4. $C(n, 4) = 15$, $n =$ _____

5. $C(n, 7) = 8$, $n =$ _____

B. For what value of r will the following equations be satisfied? Write your answer in the blank.

6. $C(12, r) = 792$, $r =$ _____

7. $C(8, r) = 28$, $r =$ _____

8. $C(11, r) = 156$, $r =$ _____

9. ${}_{10}C_r = 120$, $r =$ _____

10. ${}_{20}C_r = 4845$, $r =$ _____

Activity 3: Pick Me Up!

Directions: Solve and choose the correct answer from the box and then write the appropriate answer in the blank.

1-2. If there are 12 teams in a basketball tournament and each team must play every other team in the eliminations, how many elimination games will there be?

#1 _____ $C_2 =$ # 2 _____

12	6	66	3	56
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3-4. In a 10- item Mathematics problem-solving test, how many ways can you select 5 problems to solve?

${}_{10}C_{\#3}$ _____ $=$ #4 _____

5	25	2	252	522
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5-7. In how many ways can a committee of 5 be formed from 5 Juniors and 7 Seniors if the committee must have 3 Seniors?

$${}_5C_2 \times {}_7C_3 = \#7$$

2	4	6	7	246	350
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8-10. In a certain general assembly, three major prizes are at stake. In how many ways can the first, second, and third prizes be drawn from a box containing 120 names?

$$\#8 \times \#9 = \#10$$

3	2520	120	1685040	5040
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Activity 4: Fix My Problem!

Directions: Solve the following problems completely. (Show your solutions in the space provided)

1. If there are 12 teams in a basketball tournament and each team must play every other team in the eliminations, how many elimination games will there be?
2. If there are 7 distinct points on a plane with no three of which are collinear, how many different polygons can be possibly formed?
3. How many different sets of 5 cards can be formed from a standard deck of 52 cards?
4. In a 10-item Mathematics problem-solving test, how many ways can you select 5 problems to solve?
5. A box contains 5 red balls, 7 green balls, and 6 yellow balls. In how many ways can 6 balls be chosen if there should be 2 balls of each color?

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