LEARNING AS ONE NATION
Expanded Project

Math 10_40

JHS LEARNING ACTIVITY

Name: _____ **Grade/Score:** _____
Grade and Section: _____ **Date:** _____

Subject *(Check or choose from below.)*

- ☐ Religion/Values Education
- ☐ Natural Sciences
- ☐ Araling Panlipunan
- ☐ Filipino
- ☐ English
- ☐ Math
- ☐ TLE / ICT
- ☐ MAPEH
- ☐ HGP _____

Type of Activity *(Check or choose from below.)*_____

- ☐ Concept Notes
- ☐ Skills: Exercise / Drill
- ☐ Performance Task
- ☐ Illustration
- ☐ Formal Theme
- ☐ Informal Theme
- ☐ Others: _____

Activity Title: The Probability of the Union of Events

Learning Target: To illustrate the union of two events.

References: *(Author, Title, Pages)*
F.B Orines, et al., Next Century Mathematics, p.422
https://courses.lumenlearning.com/
V.G Baja and M.V. Bernido, CVIF Learning Activities

We can also talk about the probability of a combination of two events that can occur. For example, when we toss a fair die, we could ask about the probability of getting an odd number, as well as the probability that we get a number which is greater than 4. Of course, we could also talk about the probability that the number we get is both odd and greater than 4. Mathematically, we write the probability of a union of the two events as:

$$\boxed{P(A \cup B) = P(A) + P(B) - P(A \cap B)}$$

Example:

A fair die is tossed.
Let A = event that an odd number occurs
Let B = event that a number greater than 4 occurs.
Determine the elements of A and B. Then, find $P(A \cup B)$.

Solution:

Sample Space $S = \{1, 2, 3, 4, 5, 6\}$

Event $A = \{1, 3, 5\}$ ⟶ $P(A) = \frac{n(A)}{n(S)} = \frac{3}{6} = \frac{1}{2}$

Event $B = \{5, 6\}$ ⟶ $P(B) = \frac{n(A)}{n(S)} = \frac{2}{6} = \frac{1}{3}$

$P(A \cap B) = \{5\}$ ⟶ $P(A \cap B) = \frac{n(A \cap B)}{n(S)} = \frac{1}{6}$

$P(A \cup B) =$ _____

Exercises: Continue the solution above. What is the probability $P(A \cup B)$ of the union of A and B?