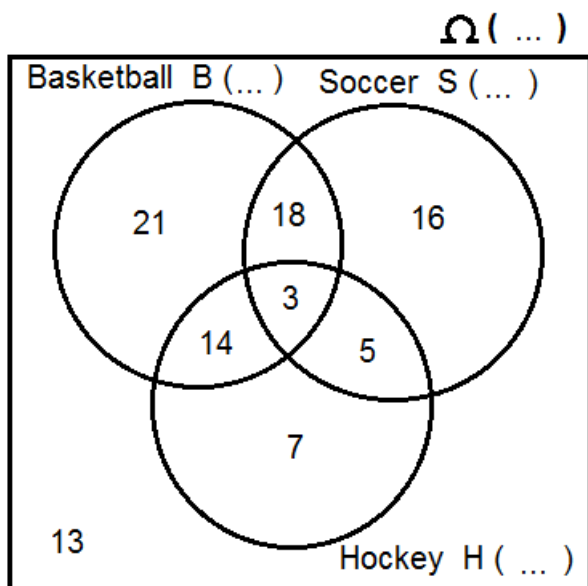**Probability- Assignment 1**   Name: _____

Problem #1: The Venn diagram below represents the number of Secondary 5 students at D'Arcy McGee High School who play basketball, hockey or soccer.

Ω (...)

Basketball B (...)   Soccer S (...)

21   18   16

3

14   5

7

13

Hockey H (...)

1) Fill in the dots. The dots represent the total number of students (# Ω) and the number of students in each sport circle.

(# Ω) =
B =
S =
H =

2) Answer the following questions [a) to z)]. How many students:

a) play basketball? ____
b) play soccer? _____
c) play hockey? _____
d) play basketball and soccer? ____
e) play basketball and hockey? ____
f) play soccer and hockey? _____
g) play basketball and soccer and hockey? _____
h) play basketball or soccer or both? _____
i) play basketball or soccer but not both? _____
j) play basketball or hockey or both? _____
k) play basketball or hockey but not both? _____
l) play soccer or hockey or both? _____
m) play soccer or hockey but not both? _____

n) do not play basketball? _____
o) do not play soccer? _____
p) do not play hockey? _____
q) do not play any of these sports? ___
r) play basketball but not soccer? ___
s) play soccer but not basketball? ____
t) play basketball but not hockey? ____
u) play hockey but not basketball? ___
v) play soccer but not hockey? ____
w) play hockey but not soccer? ____
x) play exactly one of these sports? ___
y) play at least one sport? ____
z) play exactly two sports? ____

Problem #1: A game consists of flipping a coin followed by a roll of a fair 6-sided die and then the same coin is flipped the second time.

a) Draw a tree diagram of this game including all the possible outcomes along with their respective probabilities. Verify that all the probabilities add up to 1 or 100%

b) The following two events are defined as follow:
A: "Obtaining identical results on both coin tosses and getting an even number"
B: "Getting Tails on both coin tosses"
Question: Use a Venn diagram to represent this situation using both events A and B and the Universal set Ω.

c) Calculate the following probabilities.
1. P(A∩B)
2. P(A U B) → Use the formula P(AUB) = P(A) + P(B) − P(A∩B) and verify your result by using the Venn diagram
3. Probability of obtaining Heads on both coin tosses