3.1.2 How can I represent it?
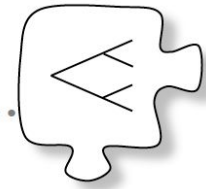
Using a Tree Diagram

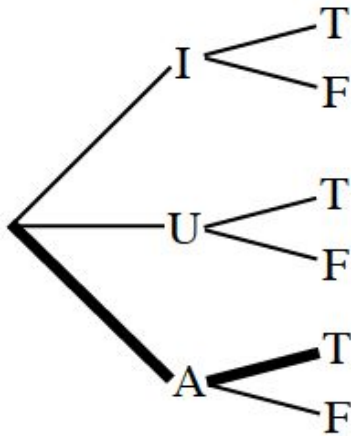## 3-12 Teacher Challenge
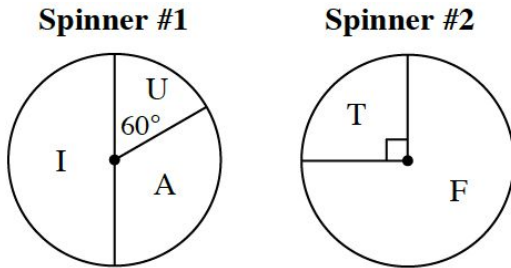
Spinner #1   **Spinner #2**

a) Independent outcomes? Yes or no?

b) Complete the probability area model of the sample space. Highlight the boxes that will make words. Then calculate the probability that you will win this game.

c). Is this game fair? Explain why or why not.

Spinner #1

|	U 1/6	A 1/3	I 1/2
T 1/4			
F 3/4			

3-13 Tree Diagram

a) Why is the tree diagram misleading?

b) Fill in the tree diagram, labeling the probabilities on each branch.

c) Highlight the branches with letter combinations that make words. Compute the probability for hitting each word, showing all work. Then calculate the total probability that you will spin a word. Is this probability the same as in problem 3-12? (If not, check your work.)

P (IF)	
P (IT)	
P (AT)	
P (Any Word)	

1

3-14 The Rat Race

Label all paths with their probability of being chosen by Romeo. Choose a method and calculate the probability that Romeo will end up in each room. Explain why you chose the method you chose.
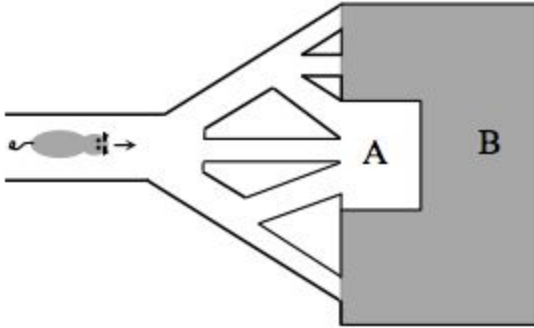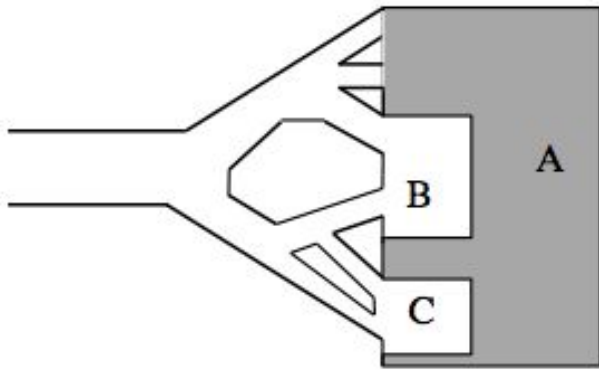

	Calculations	Probability Room A
Room A		
Room B	Calculations	Probability Room B

If a rat moves through the maze randomly, out of 100 attempts, how many times would you expect Romeo to end up in room A? How many times for room B?

	Calculations	Probability Room A
Room A 100 attempts		
Room B 100 attempts	Calculations	Probability Room B

Do you think Romeo learned and improved his ability to return to the same room over time? Could he have just been moving randomly?

3-15 Cheesy Rat Race

Label all paths with their probability of being chosen by Romeo. For the best chance of getting the cheese, in which room should the cheese be placed? Show all of your work to justify your answer.

	Calculations	Probability Room A
Room A		
Room B	Calculations	Probability Room B
Room C	Calculations	Probability Room C

If the cheese is in room C and Romeo finds the cheese six times out of every ten tries, does he seem to be learning? Show your work.