Name:_____ Date:_____

Tree Diagrams

A tree diagram is a way to represent all possible combinations of a situation.

1. Below is a Create-A-Sandwich menu. Create a Tree Diagram that shows all possible combinations (on a ***separate sheet of paper***- MAKE IT NEAT!)

BREAD	MEAT	CHEESE
White	Ham	American
Wheat	Turkey	Swiss
	Beef	Provolone
		Muenster

2. How many total combinations of sandwiches are there? How did you figure that out?

3. What is the probability that you will select a sandwich with white bread?

4. What is the probability that you will select a sandwich with American cheese?

5. What is the probability that you will select a sandwich on wheat bread with ham and any cheese?

6. What is the probability that you will select a sandwich on white bread that has either beef or turkey and has Provolone cheese?

7. What is the probability that the sandwich will be any bread, Turkey and American or Swiss cheese?

8. What is the probability that you will select a sandwich with neither beef nor Muenster cheese?

9. What is the probability that you will select a sandwich with Ham given you selected white bread?

10. What is the probability that you select a sandwich with white bread given it has swiss cheese?

11. What is the probability that you select a sandwich and it does not have beef?

12. What is the probability that you select a sandwich that does not have provolone given it is on wheat bread?

WEIGHTED TREE DIAGRAMS:

Sometimes there is not an equal chance of all outcomes happening. Every Friday a local diner does a "Mystery Plate" breakfast sandwich. For only $1.99 you get eggs, a meat and a piece of bread. They do this to sell off whatever they have extra at the end of the week. That means that not every item has an equal chance of being selected.

Here are the probabilities of each item for this week:

BREAD	EGGS	MEAT
White: 17% Wheat: 23% Italian: 60%	Fried Eggs: 42% Scrambled Eggs: 36% Poached Eggs: 22%	Bacon: 75% Ham: 15% Sausage: 10%

Create a tree diagram below that shows all the combinations of breakfast sandwiches with the probabilities included

1. How many outcomes of breakfast are there?

2. What is the probability of getting poached Eggs?

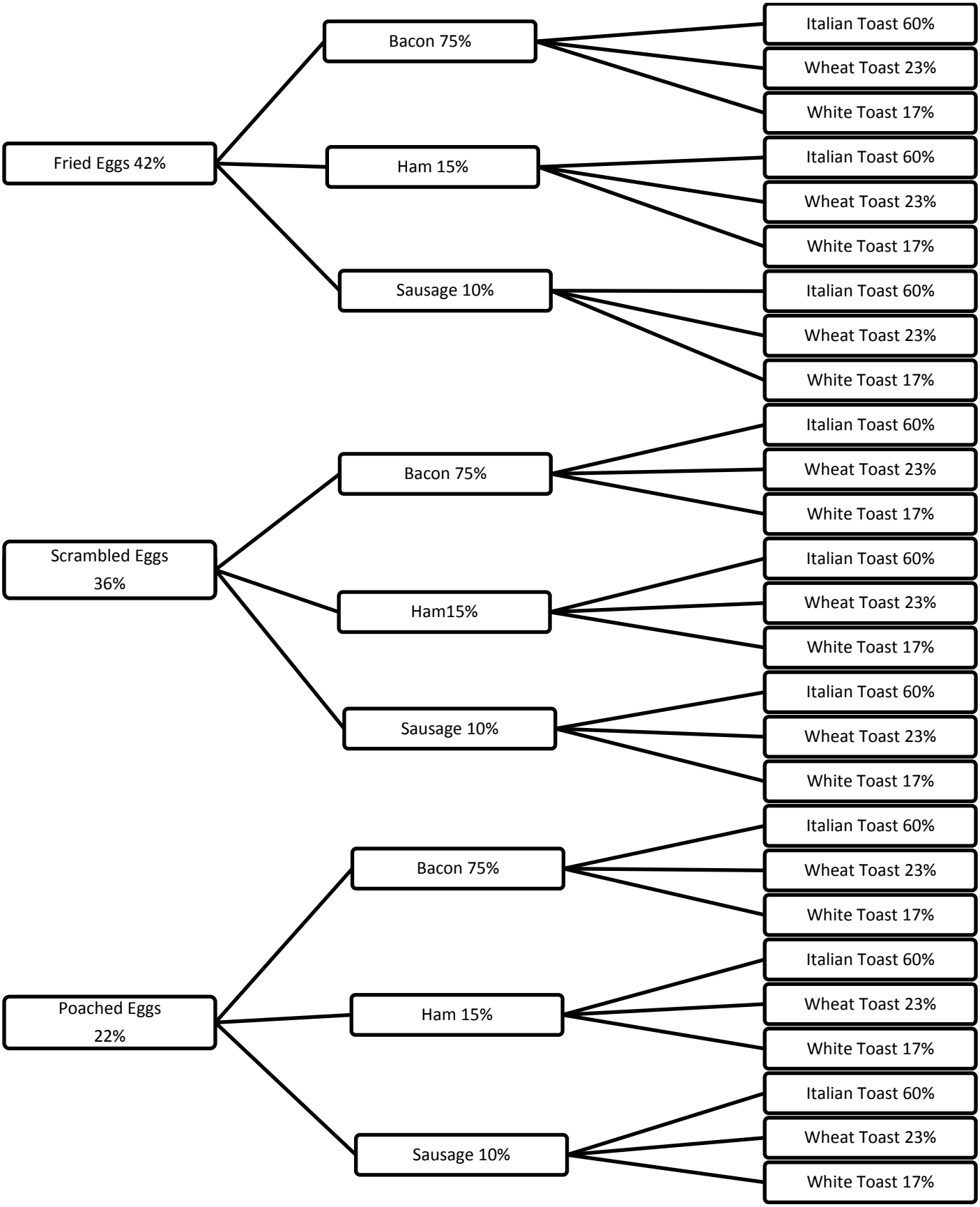
3. What is the probability of getting poached eggs, bacon and white toast?

4. What is the probability of getting scrambled eggs, ham and any bread?

5. What is the probability of NOT getting a sandwich with fried eggs, ham, and Italian together?

6. What is the probability that you will get sausage or ham?

7. What is the probability of not getting poached eggs?


Fried Eggs 42%
Bacon 75%
Ham 15%
Sausage 10%
Scrambled Eggs 36%
Bacon 75%
Ham15%
Sausage 10%
Poached Eggs 22%
Bacon 75%
Ham 15%
Sausage 10%
Italian Toast 60%
Wheat Toast 23%
White Toast 17%