Biology
Ms. Ye

Name _____
Date _____ Block _____

Macromolecule Detective

1. Cut out the food content/nutrition facts label of a cereal or snack food and tape it below. Use your notes on macromolecules to determine the chemical content of your food item.

Questions:

1. Calories are a measure of how much chemical potential **ENERGY** is found in your food source. What **two TYPES** of macromolecules would contribute mainly to the caloric content of food (we learned about 4 types/groups)?

_____ _____

2. How many calories are in one serving? _____

Fats:

3. How many of the calories in your food item are from fat? _____

4. What are the different types of fat listed (if any)? Circle the one that is worse for you.

_____ _____

5. Which **group** of macromolecules are fats part of? _____

6. Besides energy storage, what other ways are fats used in your body?

_____

Carbohydrates:

7. How many total carbohydrate grams are there per serving? _____

8. List the various types of carbohydrates shown in the nutrition label:

   _____

9. What **elements** are found in any carbohydrate? (there are 3)

   _____

10. What is the monomer of many carbohydrates?_____

11. Besides energy, what are other functions of larger carbohydrate molecules?

_____

Proteins

12. How many grams of protein are in one serving? _____

13. What elements are found in proteins (there are at least 4)?

_____

14. What functions will the proteins have in your body?

    _____

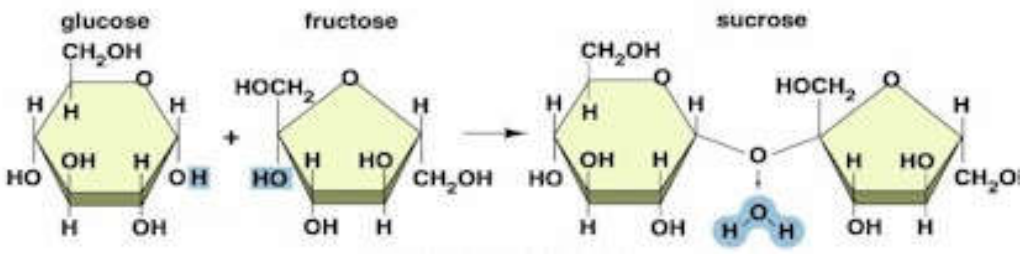
    _____

15. Lipids, carbohydrates and proteins are three of the four major macromolecule groups we are studying. They are necessary for energy and for building cells in your body. Why aren't nucleic acids listed on the food label?

_____

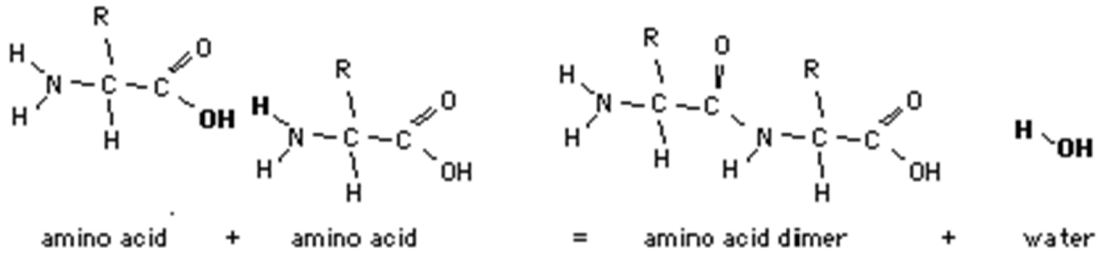
_____

16.



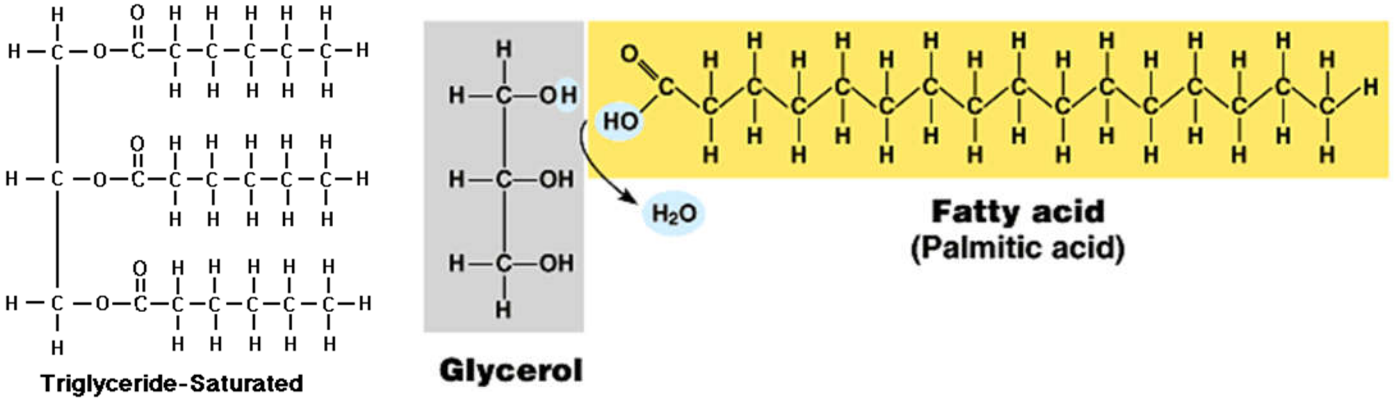
17. Monosaccharides like glucose are combined to produce larger carbohydrates. What process would combine monosaccharides to produce larger carbohydrates (polysaccharides)?

_____



18. What monomer is used to make proteins?_____

19. What is the process used to connect them?_____



20. What are the monomers in the triglyceride molecule above?

_____

21. What's the process used to connect the monomers of fats?

_____

22. What process would your body use to **digest** the snack you just consumed?

_____

(hint- it's the opposite of the process used to make the macromolecules).

23. Would this process be used on monosaccharides like glucose in order to get energy? Explain your answer.

_____

_____

24. What's the monomer of a nucleic acid? _____

25. What's the process used to connect nucleotides?_____

Digestion Overview

Go to http://kitses.com/animation/swfs/digestion.swf. Pick any of the foods and go through the animation showing the digestion of the food item. Click on "zoom in" during each segment to see more details about how the food is being digested as it moves through your body.

In the space below, describe what is happening to the food during each step of digestion

Mouth:

Stomach:

Duodenum (small intestine):

Ileum (small intestine):

Colon (large intestine):

Cloaca:

Enzymes involved in Digesting Macromolecules

Enzyme	Secreted By…	Main macromolecule the enzyme helps digest	Where this step of digestion takes place
Amylase			
Lipase			
Protease			