Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Circle the correct answer.

Organisms such as plants are (heterotrophs/ autotrophs). Other organisms known as (heterotrophs/ autotrophs) obtain their energy from consumed foods.

1. What is the chemical compound that cells use as their main source of energy? \_\_ATP\_\_\_\_
2. Finish the equation and answer the following question.

6CO2 + 6H2O -------- > \_\_\_\_\_\_\_\_\_ + \_\_\_\_\_\_\_\_\_

* 1. What is the driving force of this actions? \_\_\_\_light\_\_\_\_
  2. What are the products?
     1. Sugars and oxygen
     2. Sugars and carbon dioxide
     3. Water and carbon dioxide
     4. Hydrogen and oxygen

1. Requirements for photosynthesis to occur are:
   1. Water
   2. CO2
   3. Light
   4. Chlorophyll/ chloroplast
   5. A, b, and c
   6. All the above
2. The color of light that is LEAST useful to a plant during photosynthesis is
   1. Red
   2. Blue
   3. Green
   4. Orange
   5. Violet
3. Which of the following is NOT consistent with light dependent reactions?
   1. Photosynthesis begins when pigments in photosystem II absorb light.
   2. Pigments in photosystem I use light to re-energize the electron.
   3. The thylakoid membrane is negatively charged as the inside is positively charged.
   4. H+ ions can cross the membranes directly without the help with ATP synthase.
4. What natural factors can affect photosynthesis from progressing? (list up to 3)
   1. \_\_\_dry conditions\_\_\_\_
   2. \_\_\_temperature\_\_\_\_\_\_
   3. \_\_\_intensity of light\_\_\_\_
5. Define the following vocabulary words.

Then, draw a plant cell diagram and label it with these vocabulary words.

* 1. Endoplasmic Reticulum-
  2. Mitochondria-
  3. Nucleus-
  4. Microtubules-
  5. Golgi-
  6. Cell Wall-
  7. Central Vacuole-

1. Short answer. What is the purpose of the Calvin Cycle? What does it do? And where does it occur? (include an illustration)
2. Design an experiment. You must have two different environment in which the plants will grow. The independent variable should be a factor from question #6. Tell me how this variable will affect photosynthesis and what the plant appearance will look like in this environment. (Yes, you can include a drawing of your plant, as well. )