**Cellular Respiration**

Write the equation for cellular respiration:

Two Parts of Cellular Respiration: 1) 2)

Two types of Processes:

1. Anaerobic-
2. Aerobic-

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ glucose is broken down in the cytoplasm

For each molecule of glucose broken down \_\_\_\_\_\_\_\_ ATP and \_\_\_\_\_\_\_\_ NADH are formed

Steps of Glycolysis:

1. Two phosphate groups are joined to glucose by use of two \_\_\_\_\_\_\_\_\_\_ molecules
2. Two \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (G3P) molecules are formed
3. Two \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_groups are added and \_\_\_\_\_\_\_\_ ions are combine with NAD to form two \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ molecules
4. The two G3P molecules are converted to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_ ATP

Net Result of ATP = \_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (TCA Cycle) – series of reactions where Pyruvate is broken down into Carbon Dioxide in the Mitochondria

Prior to the beginning of the cycle:

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ reacts with \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (Co A) to form a 2 Carbon intermediate called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. \_\_\_\_\_\_\_\_CO2 is released and two \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is formed

Steps of the Krebs Cycle: (X2)

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_(A CoA) combines with \_\_\_\_\_\_\_\_Carbon compound to form \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Acid (6 carbon compound)
2. Citric Acid then breaks down in a series of steps releasing \_\_\_\_\_\_\_\_\_CO2, \_\_\_\_\_\_\_\_ATP, \_\_\_\_\_\_\_\_\_\_\_\_\_NADH and \_\_\_\_\_\_\_\_\_FADH2.

Net Yield of the Krebs CYCLE:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ occur to produce ATP. These are very similar to the processes in photosynthesis.

Two differences:

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is the proton acceptor
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is the waste product

Net production of ATP \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ when there is no oxygen present, cells can still produce energy

Two Types:

1)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ converts glucose to lactic acid EX)

2)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ converts glucose to alcohol and CO2 EX)