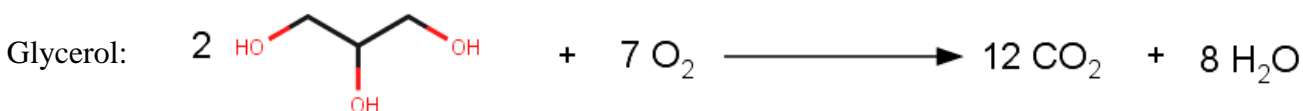
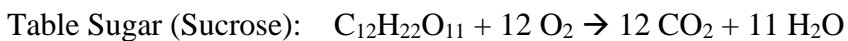
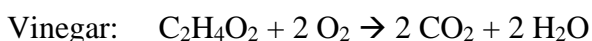
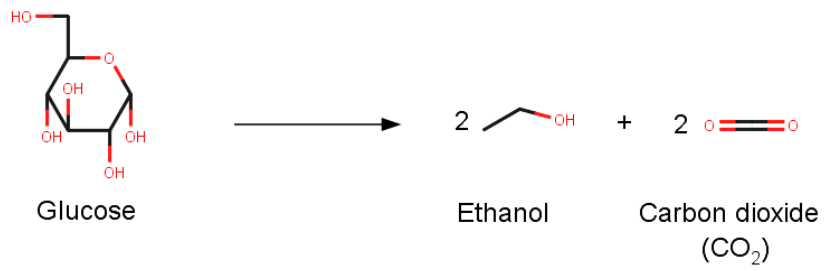


Use any resource at your disposal to answer these questions. Please submit your answers prior to class on Feb. 17<sup>th</sup>.

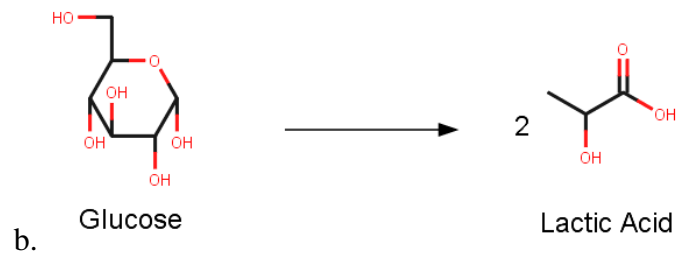
- Why is ATP considered the “energy conduit”?
- Describe the relationship between condensation and hydrolysis reactions.
  - Which type of reaction is linked to energy production?
  - Which is linked to energy consumption?
- Describe the relationship between food and ATP.
- There are many situations when food consumption happens when your body does not need energy. In this case, the food is processed differently so that the energy is stored instead of used. What are the two common molecules, derived from food, which can store energy?
- Consider glycolysis (and only glycolysis):
  - How many ATP molecules are produced from every glucose?
  - How many NADH molecules are produced from every glucose?
  - In class, we discussed two molecules that are formed during glycolysis that are “higher” energy phosphate compounds, that is, they are able to convert ADP to ATP. What are these two molecules?
- Consider the TCA Cycle:
  - How many electron producing steps are found in this cycle? Recall that each NADH and FADH<sub>2</sub> that are formed correspond to electron production step.
  - If two molecules of acetyl-CoA enter the TCA cycle, how many CO<sub>2</sub> molecules will be produced?
- For each of the following reactions, determine the following:
  - How many total electrons are transferred to in each reaction?
  - How many ATP can be made from the electron transfer? Recall that for every 4 electrons transferred, 3 ATP are produced.



8. Fermentation occurs when there is no  $O_2$  present to accept electrons. In this case, one of the two reactions occur. Determine how many electrons are transferred from the reactants to products.



a.



b.