

Problem Set 29: Lipid Metabolism and Fatty Acid Oxidation

1. Refer to the fatty acid spiral and the Krebs cycle as needed for a-e. Palmitic acid is a saturated fatty acid with 16 carbons in its chain.
 - a. How many turns in the fatty acid spiral does it take to oxidize one molecule of palmitic acid?
 - b. How many acetyl-CoA molecules form from one molecule of palmitic acid?
 - c. How many reduced coenzymes of NADH and FADH₂ are formed from fatty acid oxidation of one palmitic acid molecule?
 - d. How many ATP would result strictly from the fatty acid oxidation of one molecule of palmitic acid?
 - e. How many ATP would result from complete catabolism of one molecule of palmitic acid?