Name: _____Key_____   Quiz 26

1. Draw the acyl-CoA with a 16:0 carbon tail.

CoA—S

2. How many total C-C and C-H are present in the molecule? 46
   15   31

3. For the complete conversion of the molecule in #1 to acetyl-CoA via β-oxidation:
   a. How many acetyl-CoA are produced? 8

   b. How many $FADH_2$ are produced? 7

   c. How many NADH are produced? 7

4. For the complete conversion of the produced acetyl-CoA from the molecule in #1 to CO_2 via the citric acid cycle:
   a. How many CO_2 are produced? 16

   b. How many $FADH_2$ are produced? 8

   c. How many NADH are produced? 24

5. All together:
   a. How many $FADH_2$ are produced? 15

   b. How many NADH are produced? 31

   c. How many GTP are produced? 8

6. For the complete processing of all the $FADH_2$ and NADH via the electron transport chain:
   a. What is the magnitude of the proton gradient produced? 310 + 90 = 400

   b. How many ubiquinone are cycled? 46

   c. How many cytochrome C are cycled? 92

   d. How many O_2 are required? 23

   e. How many H_2O are produced? 46

7. Approximately, how many ATP will be synthesized via ATP synthase? ~100