Definition A <u>conjecture</u> is a statement that we believe is plausible. That is, we think it is true, but we have not yet developed a proof that it is true.

Exercise. A variant of Exercise 1.1.10c.   §1.1

Let

$$f(x) = e^{2x}.$$

As usual, $f^{(n)}$ denotes the nth derivative of f.

1. Determine the first eight derivatives of this function. Indicate your solutions in the below provided chart. For LaTex help, the first line is done for you.

n	$f^{(n)}(x)$
1	$2e^{2x}$
2	
3	
4	
5	
6	
7	
8	

2. Formulate a conjecture that appears to be true for the nth derivative of f.. The conjecture should be written as a conditional statement in the form, "If n is a natural number, then ... ."

Put your answer here.