Math 114 Fall 2018
Calculus I Practice Homework 7.5
Do not turn in

1. Suppose $f'(x) = \frac{1}{2}f(x)$ and $f(1) = 3$. Use Euler's method to approximate $f(4)$ using three steps.
2. Suppose $f'(x) = 4 - \frac{f(x)}{x}$, and $f(2) = 2$. Use Euler's method and four steps to approximate $f(4)$.
3. Suppose $f'(x) = xf(x)$, and $f(0) = 3$. Use four steps to estimate $f(4)$.
4. Suppose $f'(x) = e^x$ and $f(0) = 1$. Use four steps to estimate $f(4)$.
5. Suppose $f'(x) = f(x)$ and $f(0) = 1$. Use four steps to estimate $f(4)$.
6. Suppose $f'(x) = \sin(f(x)) - x$ and $f(0) = 2$. Use three steps to estimate $f(\pi)$.
7. Suppose $f'(x) = f(x) - x$ and $f(1) = 3$. Use one step to estimate $f(2)$.

   Now use two steps to estimate $f(2)$. Now use four steps to estimate $f(2)$. What happens?
8. Stewart 2.7.3
9. Stewart 2.7.5
10. Stewart 2.7.15
11. Stewart 2.7.19
12. Stewart 2.7.25
13. ($\star$) Stewart 2.7.37