

4. [8 points] Franklin's robots start building more robots to replace their deactivated comrades. The initial number of robots in Franklin's army is 800. Each minute, the number of robots increases by 15%. At the end of each minute, you fire an EMP which immediately deactivates 50 robots.
- a. [3 points] Let R_n denote the number of active robots in Franklin's army immediately after the EMP is fired for the n -th time. Find R_1 and R_2 .
- b. [4 points] Find a closed form expression for R_n (i.e. evaluate any sums and solve any recursion).
- c. [1 point] Find $\lim_{n \rightarrow \infty} R_n$. No justification is necessary.