Answer all of the following questions in the space provided. Show all work as partial credit may be given. Answers without justification, even if they are correct, will earn no credit.

1. ( 6 pts.) Suppose that $\$ 1000$ is invested at an annual interest rate of $8 \%$. Find the balance after 2 years if the interest is compounded (a) annually, (b) quarterly, and (c) continuously.
2. ( 4 pts .) A population of bacteria in a certain culture is 2000 initially and is 300010 hours later. Assuming that the population grows exponentially, what will the population be after 30 hours?
