

These are the answers for the even-numbered problems. Odd-numbered problems answers are in the back of the book. How to get these solutions will be posted Wednesday night.

In general, these problems will usually ask you to

1. Look up a formula given in the chapter and plug in numbers to get a function of t .
2. Solve for t in the formula to find when some condition is met.

Use the techniques in section 4.4 to solve the equations.

8. a) $n(t) = 1500e^{0.231t}$ models the population after t minutes. (In the process you had to find $r = 0.0231$ by using the doubling time).

b) $n(2) = 1571$ bacteria.

c) 42.46 minutes.

12. a) You must first find $r = 0.312$ and then get the formula $n(t) = 10586223^{0.312t}$.

b) Doubling time is 2.22 years

c) $n(50) = 63,057,239,710,000$. Using Google I got that the actual population of California in 2000 was 33,871,648.

20. a) 3.809 days

b) 8.843 days