AP Biology
Population
Practice Problems

$dN/dt = rN$
$dN/dt = rN(K-N/K)$

1. There is a population of beetles that has 3000 individuals. In one month, there are 400 births and 150 deaths. Calculate the individual growth rate.
2. A population of 300 butterflies exhibits logistic growth. If the carrying capacity is 500 butterflies and $r = 0.1$, what is the population growth rate? In other words, how many individuals are added to the population in one generation?
3. You collect the following information during a one-year period. There are at the start of the year 1,000 deer on the island; 120 deer die, 200 deer are born, 20 immigrate, and 10 emigrate. Calculate the growth rate.
4. You set raccoon traps around an area and find that the population of raccoons is approximately 2,000. Over the course of the next year, you determine that 300 raccoons are born and 290 die. Calculate the growth rate.
5. A population of crows exhibits logistic growth. If the population is 250 birds, and in a one-year period there are 100 births and 45 deaths, what is the growth rate? If the carrying capacity is 400 birds, what is the population growth rate?