**Name \_\_\_\_\_\_\_\_\_\_\_\_\_ Deer: Predation or Starvation ?**

Introduction: In 1970 the deer population of an island forest reserve (about 518 square kilometers in size) was about 2000 animals. Although the island had excellent vegetation for feeding, the food supply obviously had limits. Thus the forest management personnel feared that overgrazing might lead to mass starvation. Since the area was too remote for hunters, the wildlife service decided to bring in natural predators to control the deer population. It was hoped that natural predation would keep the deer population from becoming too large and also increase the deer quality (or health), as predators often eliminate the weaker members of the herd. In 1971, ten wolves were flown into the island.

The results of this program are shown in the following table. **Fill out the last column for each year (the first has been calculated for you). (You may use a calculator)**

|  |  |  |  |
| --- | --- | --- | --- |
| Year | Wolf Population | Deer Population | **Deer Population Change** |
| 1971 | 10 | 2,000 |  |
| 1972 | 12 | 2,300 | + 300 |
| 1973 | 16 | 2,500 |  |
| 1974 | 22 | 2,360 |  |
| 1975 | 28 | 2,224 |  |
| 1976 | 24 | 2,094 |  |
| 1977 | 21 | 1,968 |  |
| 1978 | 18 | 1,916 |  |
| 1979 | 19 | 1,952 |  |
| 1980 | 19 | 1,972 |  |

1. Graph the deer and wolf populations on the graph below. Use one color to show deer populations and another color to show wolf populations. Label the deer and wolf lines.



**Analysis: ANSWER THESE QUESTIONS ON THE BACK OF THE GRAPH… DO NOT WRITE ON THIS SHEET OF PAPER! USE COMPLETE SENTENCES… YOU DO NOT NEED TO WRITE THE QUESTION ☺**

1. **Why did the forest management bring wolves to the island?**

*Background Information for Question #2:*

*Most biology textbooks describe that predators and prey exist in a balance. This "balance of nature" hypothesis has been criticized by some scientists because it suggests a relationship between predators and prey that is good and necessary. Opponents of this hypothesis propose the following questions:*

*-Why is death by predators more natural or "right" then death by starvation?
-How does one determine when an ecosystem is in "balance”?
-Do predators really kill only the old and sick prey? What evidence is there for this statement?*

**2. What is your opinion of the balance of nature hypothesis? Would the deer on the island be better off, worse off, or about the same without the wolves. Defend your position.**