Name: _____ Date: _____

BLM 9–4

Chapter 9 Unit 4 Project

Section 9.1

1. A section of a local habitat was damaged during a storm. A local company wishes to preserve the wetland and ensure water quality. The organizers decide to replace some of the bushes and trees. They place two orders with a nursery.

- One order is for 40 bushes and 12 trees. It totals $1484.
- The other order is for 25 bushes and 18 trees. It totals $1421.

Create and solve a system of linear equations to determine the cost of one bush and the cost of one tree.

Section 9.2

2. Sharon estimates that she saves 260 L of water per week by washing her car with a bucket and sponge. Her sister Beverley washes her car with a hose, which uses more water. Sharon's washing machine uses 225 L of water per load. Bev has upgraded to a washing machine that uses only 95 L of water per load. Both sisters wash the same number of loads of laundry per week. Both wash their car once a week.

a) Develop a system of equations representing their water usage in one week.

b) When their water usage is the same, how many loads of laundry does each sister do in one week?

c) If each sister does eight loads of laundry per week, who uses more water weekly? Explain.

Section 9.3

3. The water level in a lake is decreasing. Wildlife biologists are concerned about the effect on the fish population. They decide to track the number of fish in the lake. The osprey is a fish-hunting bird. As part of their study, the biologists need to estimate the number of fish eaten by osprey.

Year	Fish in Lake	Fish Eaten by Osprey
1	10 000	700
2	9 000	900
3	8 000	1100
4	7 000	1300

a) Describe the population changes to the fish in the lake and the fish eaten by osprey.

b) Write a system of linear equations representing the populations of fish.

c) Solve the system of linear equations graphically. What does the point of intersection represent?

d) Predict what might eventually happen to the fish and osprey populations. Explain your thinking.