

I. For pages 1-4 use the Unit 11 Lab 1_Program Handout to answer the following

1a) What classes extend the class Animal? _____

b) What classes extend the class Canine? _____
(Note: Any class that extends Canine also extends Animal.)

2a) Is there any method in Canine that is not in Animal? If yes, what is it. _____

b) Is there any method in Wolf that is not in Canine? If yes, what is it. _____

c) Is there any method in Dog that is not in Canine? If yes, what is it. _____

d) Is there any method in Cat that is not in Animal? If yes, what is it. _____

e) Is there any method in FemaleHuman that is not in Animal? If yes, what is it. _____

f) Is there any method in MaleHuman that is not in Animal? If yes, what is it. _____

3a) Are there any methods in Animal that are not in Canine? If yes, what is/are it/they.

b) Are there any methods in Canine that are not in Wolf? If yes, what is/are it/they.

c) Are there any methods in Canine that are not in Dog? If yes, what is/are it/they.

d) Are there any methods in Animal that are not in Cat? If yes, what is/are it/they.

e) Are there any methods in Animal that are not in FemaleHuman? If yes, what is/are it/they.

f) Are there any methods in Animal that are not in MaleHuman? If yes, what is/are it/they.

OVER

- 4a) (1) Is there an instance variable declared in Animal? _____
(2) If yes, what value is it. _____
(3) It has a modifier that is not **private** nor **public**. What is its modifier? _____
(4) If yes, is the variable used in any **return** of any method in Animal? _____
- b) (1) Is there an instance variable declared in Canine? _____
(2) If yes, what value is it. _____
(3) If yes, is the variable used in a **return** of a method in Canine? _____
- c) (1) Is there an instance variable declared in Wolf? _____
(2) If yes, what value is it. _____
(3) If yes, is the variable used in any **return** of any method in Wolf? _____
- d) (1) Is there an instance variable declared in Dog? _____
(2) If yes, what value is it. _____
(3) If yes, is the variable used in any **return** of any method in Dog? _____
- e) (1) Is there an instance variable declared in Cat? _____
(2) If yes, what value is it. _____
(3) If yes, is the variable used in any **return** of any method in Cat? _____
- f) (1) Is there an instance variable declared in FemaleHuman? _____
(2) If yes, what value is it. _____
(3) If yes, is the variable used in any **return** of any method in FemaleHuman? _____
- g) (1) Is there an instance variable declared in MaleHuman? _____
(2) If yes, what value is it. _____
(3) If yes, is the variable used in any **return** of any method in MaleHuman? _____

Use the following info to help do the output on the next page

Note 1: If a class has no called method then the computer looks in the class that is extended for that method.

Note 2: If a class has no instance variable then the computer looks in the class that is extended for that variable and then uses its value as long as it is modified as **public** or **protected**.

CONTINUED

AP Chapter 11 Lab 1 Inheritance continued

5a) Using the Test Program on page 1 of the Unit 11 Lab Handout to complete the output:

x _____

x _____

x _____

Number in the house: _____

y _____

y _____

y _____

y _____

Number in the house: _____

Wolf _____

Wolf _____

Wolf _____

Wolf _____

Number in the house: _____

Dog _____

Dog _____

Dog _____

Dog _____

Number in the house: _____

Cat _____

Cat _____

Cat _____

Cat _____

Number in the house: _____

Female Human _____

Female Human _____

Female Human _____

Female Human _____

Number in the house: _____

Male Human _____

Male Human _____

Male Human _____

Number in the house: _____

Bye

- II. A) An Introduction to Inheritance (11.1 pp. 430-398)
 - 1) a) Open and Run **AP1ch11lab01aTest.java**
 - b) Check your answers to what you wrote on page 3

- B) Complete below a Hierarchy Chart for the classes used in this lab (see pages 434-435)