• What will be printed?

Meow. I am a cat. My name is Kurre.

and I am 6 years old.

Woof. I am a dog. My name is Vilma.

and I am 3 years old.

• Explain how it is that the instance variable age of Animal can be used in Cat and Dog when it is declared in Animal.

Because the Cat class and Dog class inhenrit Animal class.

• What actually consists an instance of?

Instance is a concrete occurrence of any [object](https://en.wikipedia.org/wiki/Object_(computer_science)), existing usually during the [runtime](https://en.wikipedia.org/wiki/Run_time_(program_lifecycle_phase)) of a computer program.

• And what consists a class of?

A class contains data field descriptions (or properties, fields, data members, or attributes).

• What is the difference between a class and an instance?

Class variables are shared across all objects while instance variables are for data unique to each instance. While Instance variable overrides the Class variables having same name which can accidentally introduce bugs or surprising behaviour in our code.

• Change the declaration of the instance variable age of Animal to a class variable using static, in this way:  
public static int age;

• What is the result of the output now? Why?

Meow. I am a cat. My name is Kurre.

and I am 3 years old.

Woof. I am a dog. My name is Vilma.

and I am 3 years old.

This is because a static variable is a variable that has been allocated "statically", meaning that its lifetime (or "extent") is the entire run of the program.

• It may happen that you get warnings from the compiler that you should access the variable age via Animal.age, but it should be possible to run the program anyway. Otherwise, change the references to age into Animal.age.

• Where is the value of an instance variable stored?

The value of an instance variable stored in heap.

• Where is the value of a class variable stored?

The value of an class variable stored in heap.

• What refers the variable this to?

this is a reference to the current object.