Oblig 6 – IN3060

1.1 DL Axioms

1. Every hors is an animal:

Horse ⊆ Animal

1. Every animal is a male or a female:

Animal ≡ Male ∧ Female

1. Nothing is both a male and a female

∃X (male.X ꓴ female.X) ⊆ ⊥

13. Every monté horse is a race horse which has only competed in monté races.

MonteHorse ≡ ∀hasCompeted.MonteRace -x

14. A superhorse is by definition a race horse which has won more than 100 horse races:

SuperHorse ≡ RaceHorse ꓴ >= 100 hasWon.HorseRace

15. You must compete in a race to win a race:

∀hasWon.HorseRace ⊆ hasCompeted.HorseRace

19. Every race horse has at least one trainer which is a person:

RaceHorse ⊆ >= 1 hasTrainer.Person

21. If a horse has a trainer, then this trainer trains the horse:  
 Horse ꓴ hasTrainer.(Person ꓴ trains.Horse)

About individuals:

1. The horse called "Rex Rodney" is a superhorse. Its trainer is "Kjell Håkonsen", and it won the race Elitloppet (in 1986, use the identifier :Elitloppet1986). Its sire has the name "Doctor Rodney":

Horse.

{«Rex Rodney»} ≡ SuperHorse ꓴ hasTrainer.{«Kjell Håkonsen»} ꓴ hasWon.{«:Elitloppet1986») ꓴ sire.{«Doctor Rodney»}

1. Elitloppet is not a Monté race:

{Elitloppet:1986} ⊆ ¬MonteRace

1. The horse called «Steady, Ready, Go” is a filly and monté horse:

{“Steady, Ready, Go”} ⊆ (Filly ꓴ MonteHorse)

1.2 Questions

1. Unknown.
2. Yes. Kjell Håkonsen trains Rex Rodney and Rex Rodney hasWon (and hasCompeted) in :Elitloppet1986.
3. Unknown. Don’t know the age.
4. Unknown.

5.

6. No. A Filly is less than 4 years old.