**#rinatcanaan 207744012**

**Question 1**

**the facts -**

student(dani,prolog)..

student(nili,history).

student(nili,prolog).

student(ran,matimatics).

student(ran,prolog).

student(ran,history).

student(dani,matimatics).

**the questions and answers:**

**q1** - student(X,history)

**ans1** - X = nili

X = ran

**q2** - student(nili,X)

**ans2** - X = history

X = prolog  
**q3** - student(nili,X),student(dani,X)  
**ans3** - **X** = prolog  
**q4** - student(\_,matimatics)  
**ans4** -true  
**q5**- student(yosi,\_)  
**ans5**- false  
**q6**- student(X,prolog),student(X,matimatics) **ans6**- X = dani  
X = ran

**Question 2**

male(igal).

male(david).

male(yoav).

female(orly).

female(tamar).

female(rinat).

female(tal).

male(amitai).

female(michal).

married(igal,orly).

married(tamar,amitai).

parent(igal,david).

parent(igal,yoav).

parent(igal,tamar).

parent(igal,rinat).

parent(igal,tal).

parent(orly,david).

parent(orly,yoav).

parent(orly,tamar).

parent(orly,rinat).

parent(orly,tal).

father(X,Y):-  
male(X),parent(X,Y).

mother(X,Y):-  
female(X),parent(X,Y).

parents(X,Y):-  
parent(X,Z),parent(Y,Z),X\=Y.  
(\= it means x!=y)

siblings(X,Y):-  
parent(Z,X),parent(Z,Y),X\=Y.

brother\_in\_law(X,Y):-  
male(X),siblings(X,Z),married(Y,Z).

brother\_in\_law(X,Y):-  
male(X),siblings(Y,Z),married(X,Z).

son(X,Y):-  
male(X),parent(Y,X).

daughter(X,Y):-  
female(X),parent(Y,X).

grandfather(X,Y):-  
male(X),parent(X,Z),parent(Z,Y).

grandmother(X,Y):-  
female(X),parent(X,Z),parent(Z,Y).

grandson(X,Z):-  
male(X),parent(Z,Y),parent(Y,X).

granddaughter(X,Z):  
-female(X),parent(Z,Y),parent(Y,X).

uncle(X,Y):-  
male(X),parent(Z,Y),siblings(Z,X).

cousin(X,Y):  
-male(X),parent(Z,X),parent(W,Y),siblings(Z,W).

niece(X,Y):-  
female(X),parent(Z,X),siblings(Z,Y).

**question 3:**above(bicycle ,pencil)  
above(bicycle , clock)  
above(camera, butterfly)  
above(camera, fish)  
left\_of(pencil, clock)  
left\_of(clock, butterfly)  
left\_of(butterfly, fish)  
left\_of(bicycle, camera)  
  
right\_of(X,Y):-  
left\_of(Y,X).  
  
below(X,Y):-  
above(Y,X).