1. vINCENT Atom
2. Footmassage Varibale
3. variable23 Atom
4. Variable2000 Variable
5. big\_kahuna\_burger Atom
6. ’big  kahuna  burger’ Atom
7. big  kahuna  burger neither
8. ’Jules’ Atom
9. \_Jules variable
10. ’\_Jules’ Atom

1.2

loves(Vincent,mia) Complex functor(loves) Arity (2)

’loves(Vincent,mia)’ Atom

Butch(boxer) nothing

boxer(Butch) Complex functor(boxer) Arity(1)

and(big(burger),kahuna(burger)) Complex term functor(and) Arity(2)

and(big(X),kahuna(X)) Complex term functor(and) Arity(2)

\_and(big(X),kahuna(X)) nothing

(Butch  kills  Vincent) nothing

kills(Butch  Vincent) nothing

kills(Butch,Vincent nothing

1.3

woman(vincent).   
   woman(mia).   
   man(jules).   
   person(X):-  man(X);  woman(X).   
   loves(X,Y):-  father(X,Y).   
   father(Y,Z):-  man(Y),  son(Z,Y).   
   father(Y,Z):-  man(Y),  daughter(Z,Y).

Facts – 3

Rules -4

Clauses –

Predicates -6

Head: person(X), loves(X,Y),father(Y,Z)

Goals: father(X

person(X):-  man(X);  woman(X).

Head: person(X)

Goal : man(X);  woman(X)

loves(X,Y):-  father(X,Y).

Head : loves(X,Y)

Goal : father(X,Y)

   father(Y,Z):-  man(Y),  son(Z,Y).

Head : father(Y,Z)

Goal: man(Y) , son(Z,Y)

   father(Y,Z):-  man(Y),  daughter(Z,Y).

Head: father(Y,Z)

Goal: man(Y), daughter(Z,Y)

1.4

Exercise  1.4 Represent the following in Prolog:

1. Butch is a killer. Killer(Butch).
2. Mia and Marsellus are married. Married(Mia,,Marsellus).
3. Zed is dead. Dead(Zed).
4. Marsellus kills everyone who gives Mia a footmassage. Kills(Marsellus,footmassage(Mia))
5. Mia loves everyone who is a good dancer. Loves(Mia,Dancer(X))
6. Jules eats anything that is nutritious or tasty. Eat(Julia,(nutritious;tasty))

1.5

wizard(ron).   
   hasWand(harry).   
   quidditchPlayer(harry).   
   wizard(X):-  hasBroom(X),  hasWand(X).   
   hasBroom(X):-  quidditchPlayer(X).

How does Prolog respond to the following queries?

wizard(ron). yes

witch(ron). ERROR

wizard(hermione). no

witch(hermione). ERROR

wizard(harry). yes

wizard(Y). ron

witch(Y). ERROR