For the given family tree, do as directed using PROLOG:

- Write the predicates using the following relations:
  1. parent/2
  2. male/1
  3. female/1
  4. husband/2
- Write the rules using above relations for the following:
  1. Child
  2. Mother
  3. Father
  4. Wife
  5. Son
  6. Daughter
  7. Brother
  8. Sister
  9. Uncle
  10. Aunt
  11. Nephew
  12. Niece

CODE:

```
%predicates
female(mary).
female(sandra).
female(juliet).
female(lisa).
male(peter).
male(paul).
male(dick).
male(bob).
male(harry).
parent(bob, lisa).
parent(bob, paul).
parent(bob, mary).
```

```prolog
parent(juliet, lisa).
parent(juliet, paul).
parent(juliet, mary).
parent(peter, harry).
parent(lisa, harry).
parent(mary, dick).
parent(mary, sandra).
husband(peter,lisa).
husband(bob,juliet).

%rules
child(X,Y) :- parent(Y,X).
mother(X,Y) :- parent(X,Y),female(X).
father(X,Y) :- parent(X,Y),male(X).
wife(X,Y) :- husband(Y,X).
son(X,Y) :- child(X,Y),male(X).
daughter(X,Y) :- child(X,Y),female(X).
brother(X,Y) :- parent(Z,X), parent(Z,Y),male(X), X \= Y.
sister(X,Y) :- parent(Z,X), parent(Z,Y),female(X), X \= Y.
uncle(X,Y) :- parent(Z,Y),male(X), brother(X,Z).
aunt(X,Y) :- parent(Z,Y),female(X), sister(X,Z).
nephew(X,Y) :- parent(Z,X), male(X),(brother(Y,Z);sister(Y,Z)).
niece(X,Y) :- parent(Z,X), female(X),(brother(Y,Z);sister(Y,Z)).
```

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?- [q1].
true.

?- child(lisa, X).
X = bob ;
X = juliet.

?- mother(lisa, X).
X = harry.

?- father(bob, X).
X = lisa ;
X = paul ;
X = mary.

?- wife(lisa, X).
X = peter.

?- son(harry, X).
X = peter ;
X = lisa.

?- daughter(sandra, X).
X = mary.

?- brother(harry, X).
false.

?- brother(paul, X).
X = lisa ;
X = mary ;
X = lisa ;
X = mary.

?- sister(lisa, X).
X = paul ;
X = mary .
```

```
?- sister(lisa, X).
X = paul ;
X = mary .

?- uncle(paul, X).
X = harry ;
X = harry ;
X = dick ;
X = dick ;
X = sandra ;
X = sandra.

?- aunt(mary, X).
X = harry ;
X = harry .

?- nephew(harry, X).
X = paul ;
X = paul ;
X = mary ;
X = mary .

?- niece(sandra, X).
X = paul ;
X = paul ;
X = lisa ;
X = lisa .
```