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**\* CMPSCI 4250**

**\* Jul 7, 2021**

**\* Project 3**

**Question 1**

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male(pete).

male(mark).

male(john).

male(frank).

male(tom).

male(henry).

male(matt).

male(todd).

female(lilly).

female(kate).

female(anne).

female(alice).

female(jenny).

parent(pete, mark).

parent(pete, tom).

parent(pete, anne).

parent(mark, lilly).

parent(mark, john).

parent(mark, frank).

parent(tom, kate).

parent(anne, alice).

parent(anne, matt).

parent(alice, henry).

parent(matt, jenny).

parent(matt, todd).

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

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

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

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

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

grandparent(X, Z) :- parent(X, Y) , parent(Y, Z).

1. Is Pete Mark’s parent?  
     
   **parent(pete, mark).  
   true**
2. Is Anne Jenny’s parent?  
     
   **parent(anne, jenny).  
   false**
3. Who is Todd’s father?  
     
   **father(X, todd).  
   X = matt**
4. Who is Tom’s sibling?  
     
   **sibling(tom, X).  
   X = mark**

**X = anne**

1. Who is Lilly’s brother?  
     
   **brother(X, lilly).  
   X = john**

**X = frank**

1. Who is Henry’s grandparent?  
     
   **grandparent(X, henry).  
   X = anne**
2. Who is Alice’s sister?  
     
   **sister(X, alice).  
   false**
3. Is Frank Kate’s brother?  
     
   **brother(frank, kate).  
   false**
4. Who is Matt’s mother?  
     
   **mother(X, matt).  
   anne**

1. Is Mark Anne’s brother?  
     
   **brother(mark, anne).**

**true**