EE 4785 **Homework 1** **Due: 31 January 1996**

Problem 1: Consider the Prolog below, which has information about automobiles:

```
% Fact car(make,model) indicates that automobile "model" is manufactured
% by "make".

car(toyota,celica).
car(ford,mustang).
car(gm,impact).

% Fact enginOf(model,name) indicates that automobile "model" uses engine
% "name".

engineOf(celica,e1).
engineOf(mustang,e2).
engineOf(impact,e3).

% Fact engData(name,fuel,cyl,disp) (arity 4) describes engine "name" which
% uses fuel \meta{fuel}, has \meta{cyl} cylinders and displacement "disp".

engData(e1,gas,4,2000).
engData(e2,gas,8,5000).

% Fact engData(name,electric) indicates that engine name "name" is electric.

engData(e3,electric).
```

Write a Prolog program so that goal `usesFuel(Make,Fuel)` succeeds if `Make` can be unified with a manufacturer of a car that uses `Fuel`. For example, given the data above:

```
 ?- usesFuel(Make,electric).

 Make = gm

yes
```

Problem 2: Write a Prolog program so that a goal will give exactly 1125 solutions. That is, a patient user can reject solutions 1125 times before Prolog responds `no`. *Hint:* $1125 = 3\times 3\times 5\times 5\times 5$.