% tính giai thừa củav1 số

giaithua(0,1) :- !.

giaithua(X,Y):- X1 is X -1, giaithua(X1,Y1), Y is X\*Y1.

% giaithua(5, X). = 120-----------------------------

% in ra danh sach

indanhsach(L,H,T):- L = [H|T].

% indanhsach([1,2,3,4,5],X,Y).-------------------------

% dem xem danh sach co bao nhieu phan tu

dem([],0) :- !.

dem([\_|T], X):- dem(T,X1), X is X1+1.

% tong cac phan tu trong mot danh sach

tong([],0):-!.

tong([H|T],X):-tong(T,X1), X is X1 + H.

% tong([1,2,3,4,5], T). = 15-----------------------------

% them ptu vao cuoi danh sach và trả ra 1 danh sach mới

noids([], L2, L2).

noids([X | L1], L2, [X | L3]) :- noids(L1, L2, L3). % noids([1,2], [3,4], L3). L1+L2->L3

addptu(L, X, NewL) :- noids(L, [X], NewL).

% addptu([1,2,3,4,5], 9, L).-----------------------------

%4 lấyds ra các phân ftử lẻ và lưu vào danh sách dung include

is\_odd(I) :- 0 =\= I mod 2.

ptle(L, Newlist) :- include(is\_odd, L, Newlist).

% query ptle([1,2,3,4,5,6,7,8,9,13,15,20], L).------------

% in ra cac phan tu le trong danh sach

printle([]) :- !.

printle([H|T]) :- H mod 2 =\= 0, print(H), printle(T), !.

printle([\_|T]) :- printle(T).

% printle([1,2,3,4,5,6,7,8,9,13,15,20]).

% tao ra 1 danh sach chua cac phan tu le tu danh sach ban dau

ptle1([],[]):-!.

ptle1([H|T],[H|T1]):- H mod 2 =\= 0, ptle1(T,T1), !.

ptle1([\_|T],T1):- ptle1(T,T1).

% ptle1([1,2,3,4,5,6,7,8,9,13,15,20], L).----------------------

%tong cac phan tu le trong danh sach

tongptle([], 0):- !.

tongptle([H|D], T):- 0 =\= H mod 2, tongptle(D, T1), T is H+T1, !.

tongptle([\_|D], T):- tongptle(D, T1), T is T1.

% tongptle([1,2,3,4,5,6,7,8,9,13,15,20], T). = 53-------------------

% tao ra 1 danh sach chua cac phan tu nhỏ hơn X từ danh sách ban đầu

ptnho([],[]):-!.

ptnho([H|T],[H|T1]):- H < 10, ptnho(T,T1), !.

ptnho([\_|T],T1):- ptnho(T,T1).

% ptnho([1,2,3,11,45,0,4,5,6,7,8,9,13,15,20], L).-------------------