

par(X) :- X mod 2 =:= 0.  
impar(X) :- X mod 2 =\= 0.

fib(0, 1) :- !.  
fib(1, 1) :- !.  
fib(2, 1) :- !.

fib(N,R) :- N < 9,  
          N > 2,  
          N1 is N-1,  
          N2 is N-2,  
          fib(N1,R1),  
          fib(N2,R2),  
          R is R1+R2.

fib(N,R) :- par(N),  
          N1 is N/2,  
          N2 is (N/2) - 1,  
          fib(N1, R1),  
          fib(N2, R2),  
          R is R1\*R1 + 2\*R1\*R2.

fib(N,R) :- impar(N),  
          N2 is N//2,  
          N1 is N2 - 1,  
          fib(N1, R1),  
          fib(N2, R2),  
          R is R1\*R1+R2\*R2.