function [x,i] = steepestDescent(A,b)

if ~esPositivaDefinida(A)

error('La matriz A debe ser positiva definida.')

end

tol = eps;

x = zeros(size(b));

i = 1;

cond = true;

max\_iters = 5000;

while cond

xp = x;

rk = b - A\*xp;

alpha = dot(rk',rk)/(rk'\*A\*rk);

x = xp + alpha\*rk;

i = i+1;

cond = norm((x-xp)./x) > tol && i<max\_iters;

end

end