Initialize the live-node list to be empty;
Put root node $v_1$ on the live-node list;
Set $f(v_1) := 0$;
Set $LT := 0$;
while live-node list is not empty do
begin
choose node $p$ with the greatest value of $g(p)$ from the live-node list;
Set $G := 0$;
if $h(p) > S$ then 
remove node $p$ from the live-node list;
else begin
Put the child nodes of node $p$ into set $G$;
for each node $u$ in $G$ do
begin
if $g(u) > LT$ then 
set max ($LT$, $f(u)$);
end;
insert node $u$ into the live-node list;
end;
remove node $p$ from the live-node list;
end;
end
output the answer: node $w$ and the optimal value $g(w) := LT$;