function [cost, assignment] = transportation\_vam(supply, demand, costs)

m = length(supply);

n = length(demand);

assignment = zeros(m, n);

while sum(supply) > 0 & sum(demand) > 0

u = zeros(1, m);

v = zeros(1, n);

min\_cost = Inf;

min\_i = 0;

min\_j = 0;

for i = 1:m

for j = 1:n

if assignment(i, j) == 0

temp\_cost = costs(i, j) - u(i) - v(j);

if temp\_cost < min\_cost

min\_cost = temp\_cost;

min\_i = i;

min\_j = j;

end

end

end

end

min\_supply=min(supply(min\_i), demand(min\_j));

assignment(min\_i, min\_j) = min\_supply;

supply(min\_i)=supply(min\_i) - min\_supply; demand(min\_j)=demand(min\_j) - min\_supply;

if sum(supply == 0)<m

u(min\_i)=costs(min\_i, min\_j) - v(min\_j);

end

if sum(demand == 0)< n v(min\_j)=costs(min\_i,min\_j)-u(min\_i);

end

end cost=sum(sum(assignment .\* costs));

supply = [20, 30, 25];

demand = [30, 25, 20];

costs = [5 7 3; 4 6 8; 9 2 5];

[cost, assignment] = transportation\_vam(supply, demand, costs);

disp(cost)

disp(assignment)