

```
A = [ 0.8 , -0.4, 0;
      -0.4 , 0.8 , -0.4;
      0, -0.4, 0.8 ];
operations = 0;
B = [41; 25; 105];

n = length(A);

Xi = zeros(n,1);
Xf = zeros(n,1);

error = 10^(-6);

while 1>0
    for i = 1:n

        sum = 0;
        for j = 1:n
            if(i~=j)
                sum = sum + (A(i,j)*Xi(j));
                operations = operations + 2;
            end
        end

        Xi(i) = Xf(i);
        Xf(i) = (B(i) - sum)/A(i,i);
        operations = operations + 2;
    end

    isConverging = 1; % like boolean value for checking convergence

    % checking convergence for every element
    for k = 1:n
        if abs((Xf(k) - Xi(k))/Xf(k)) > error
            isConverging = 0;
        end
    end

    if(isConverging == 1)
        break;
    end
end

linsolve(A, B)
Xf
```