
```
% Q8

A = [1 2; 3 4];
b = [-1; -1];
X = lineq(A, b);
disp("a = ")
disp(X);
A = [1 2; 2 4];
b = [-1; -1];
X = lineq(A, b);
disp("b = ")
disp(X);
A = [1 2];
b = 3;
X = lineq(A, b);
disp("c = ")
disp(X);
A = [1; 2];
b = [2.9; 3.9];
X = lineq(A, b);
disp("d = ")
disp(X);
function X = lineq(A, b)
    m = size(A, 1);
    n = size(A, 2);
    if m == n
        if cond(A) > 1e14
            X = pinv(A)*b;
        else
            X = A\b;
        end
    else
        if m < n
            X = A'*pinv(A*A')*b;
        else
            X =pinv(A'*A)*A'*b;
        end
    end
end

a =
     1
    -1

b =
    -0.1200
    -0.2400

c =
     0.6000
     1.2000
```

$$\vec{d} =$$
$$2.1400$$

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