```
function main2
    clc

    n = 20;

    A = zeros(n);
    b = 5*ones(n,1);

    A(1,1) = 4; A(1,2) = -1; b(1) = 9;

    for i = 2:n-1
        A(i,i-1) = -1;
        A(i,i) = 4;
        A(i,i+1) = -1;
    end

    A(n,n-1) = -1; A(n,n) = 4;

    [x, d] = gauss(A,b);

    display(x);
    display(d);
end

function [x,det] = gauss(A,b)
    if size(b,2) > 1
        b = b';
    end

    n = length(b);
    for k = 1:n-1
        for i = k+1:n
            l = A(i,k)/A(k,k);
            A(i,k:n) = A(i,k:n) - l*A(k,k:n);
            b(i) = b(i) - l*b(k);
        end
    end

    if nargout == 2
        det = prod(diag(A));
    end

    b(n) = b(n)/A(n,n);

    for k = n-1:-1:1
        b(k) = ((b(k) - A(k,k+1:n)*b(k+1:n))/A(k,k));
    end
    x = b;
end
```

```
x =
```

```
    2.9019
    2.6077
    2.5289
    2.5077
    2.5021
    2.5006
    2.5001
    2.5000
    2.5000
    2.5000
    2.5000
    2.5000
    2.4999
    2.4998
    2.4991
    2.4965
    2.4871
    2.4519
    2.3205
    1.8301

d =

   2.9601e+11
```

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