Contents

```
% Midterm Problem 3 (b)
% Polynomial division algorithm

clear
clc
close all
```

Coefficients of the poly & divisor

```
o = 5; % Order of the poly
A(:,1) = [1;-15;85;-225;274;-120]; % Coefficients of the poly (Decreasing order)
N = 5; % Divide the poly by (x - N)
```

Division

Reordering the coefficients

```
for i = 1 : o+1
    Ap(i,1) = A(o-i+2,1);     % Increasing order
end % for

% Division
Qi(o+1,1) = Ap(o+1);
for i = o : -1 : 1
    Qi(i,1) = Ap(i) + N*Qi(i+1,1);    % Increasing order
end % for

R = Qi(1)    % Remainder

% Coefficients for Q
for i = 1 : o
    Q(i,1) = Qi(o-i+2,1);    % Decreasing order
end % for

disp('Qn-1 = ')
disp(Q)
```

```
R =

     0

Qn-1 =
     1
   -10
    35
   -50
    24
```