```
clc
clear all
close all
disp('-------------------------------------1f----------------------------')
syms N1(x) N2(x) N3(x) N4(x) x Le EI qo

s=x/Le;
N1(x)=1- 3*s^2 + 2*s^3;
N2(x)=Le*(s - 2*s^2 + s^3);
N3(x)=3*s^2 - 2*s^3;
N4(x)=Le*(-s^2 + s^3);

N=[N1(x),N2(x),N3(x),N4(x)];
B=diff(N,2)

Ke=int(EI*B'*B,0,Le)

disp('-------------------------------------1g----------------------------')
Pfef=int(qo*N,0,Le)
```

```
-------------------------------------1f----------------------------

B =

[(12*x)/Le^3 - 6/Le^2, Le*((6*x)/Le^3 - 4/Le^2), 6/Le^2 - (12*x)/Le^3,
 Le*((6*x)/Le^3 - 2/Le^2)]


Ke =

[ (12*EI)/Le^3,  (6*EI)/Le^2, -(12*EI)/Le^3,  (6*EI)/Le^2]
[  (6*EI)/Le^2,    (4*EI)/Le,  -(6*EI)/Le^2,    (2*EI)/Le]
[-(12*EI)/Le^3, -(6*EI)/Le^2,  (12*EI)/Le^3, -(6*EI)/Le^2]
[  (6*EI)/Le^2,    (2*EI)/Le,  -(6*EI)/Le^2,    (4*EI)/Le]

-------------------------------------1g----------------------------

Pfef =

[(Le*qo)/2, (Le^2*qo)/12, (Le*qo)/2, -(Le^2*qo)/12]
```

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