

Finite Element method

Number of elements = 3

Element-1

Mass Matrix [M]1

0.000000	0.000000
0.000000	0.015000

Stiffness matrix [K]1

3141.592654	-3141.592654
-3141.592654	3141.592654

Element-2

Mass Matrix [M]2

0.000000	0.000000
0.000000	0.000000

Stiffness matrix [K]2

1000.000000	-1000.000000
-1000.000000	1000.000000

Element-3

Mass Matrix [M]3

0.002500	0.000000
0.000000	0.000000

Stiffness matrix [K]3

994.019551	-994.019551
-994.019551	994.019551

Global Mass matrix

0.000000	0.000000	0.000000	0.000000
0.000000	0.015000	0.000000	0.000000
0.000000	0.000000	0.002500	0.000000
0.000000	0.000000	0.000000	0.000000

Global Stiffness matrix

3141.592654	-3141.592654	0.000000	0.000000
-3141.592654	4141.592654	-1000.000000	0.000000
0.000000	-1000.000000	1994.019551	-994.019551

0.000000	0.000000	-994.019551	994.019551
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Fixed-Fixed Boundary condition

Natural frequencies:

478.740

918.979