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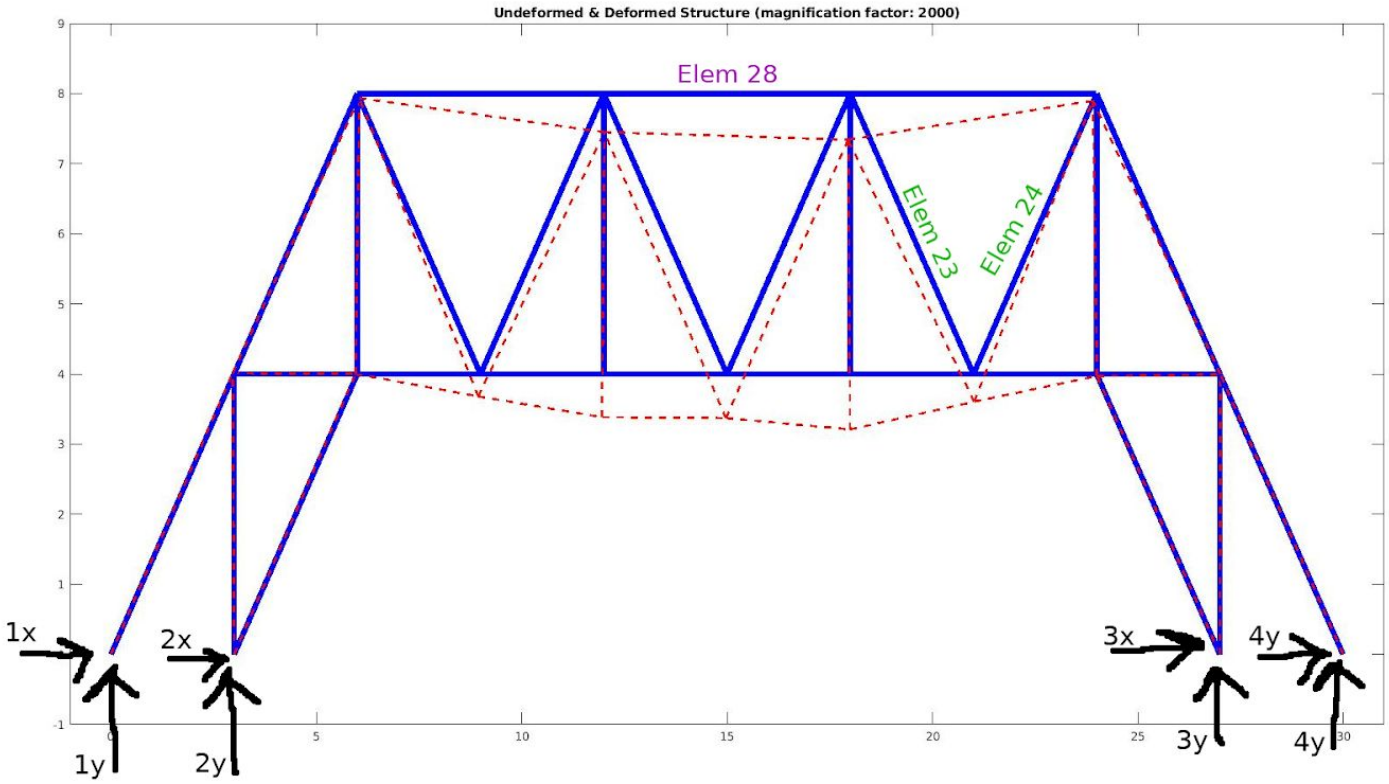
COE 321K

Coding Project One

Part A.



Part B.

Elements 23 and 24 are under the most stresses while element 28 is under the most force. Element 23 is under 511.079 psi of compressive stress while element 24 is under 511.079 psi of tensile stress. Element 28 is subjected to 2597.523 lbs of downward force.

Part C.

The four supports are labeled by their node and direction. Values are: 1x = 405.349lb, 1y = 540.466 lb, 2x = 746.114, 2y = 824.080, 3x = -808.840, 3y = 1178.624, 4x = -342.623, 4y = 456.830.

DISPLACEMENT RESULTS (inches)

Node	x-dir(u)	y-dir(v)
1	-1.351E-13	-1.802E-13
2	-2.487E-13	-2.747E-13
3	2.696E-13	-3.929E-13
4	1.142E-13	-1.523E-13
5	-2.318E-04	6.830E-05
6	-2.702E-04	8.367E-06
7	-3.358E-04	-1.919E-03
8	-2.478E-04	-3.703E-03
9	-1.599E-04	-3.773E-03
10	-3.093E-05	-4.751E-03
11	9.803E-05	-2.373E-03
12	4.300E-05	-1.784E-04
13	6.554E-05	-4.007E-05
14	2.824E-04	-3.896E-04
15	8.728E-05	-3.303E-03
16	-3.023E-04	-3.951E-03
17	-5.490E-04	-6.098E-04

REACTION RESULTS (lbs)

Node	x-dir(u)	y-dir(v)
1	405.349	540.466
2	746.114	824.080
3	-808.840	1178.624
4	-342.623	456.830
5	-0.000	0.000
6	0.000	0.000
7	-0.000	-0.000
8	-0.000	-0.000
9	-0.000	-0.000
10	-0.000	-0.000
11	-0.000	-0.000
12	0.000	-0.000
13	0.000	-0.000
14	0.000	0.000
15	0.000	-0.000
16	0.000	0.000
17	-0.000	0.000

MEMBER FORCES AND STRESSES

Elem.	Force(lbs)	Stress(psi)
1	-675.582	-42.224
2	170.739	42.685
3	-1243.523	-77.720
4	-1348.067	-84.254
5	-100.170	-25.043
6	-571.038	-35.690
7	-128.054	-32.013
8	-874.168	-54.635
9	1172.650	73.291
10	1172.650	73.291
11	1719.469	107.467
12	1719.469	107.467
13	-733.713	-45.857
14	75.128	18.782
15	-462.159	-28.885
16	-994.819	-248.705
17	1705.682	426.421
18	-1705.682	-426.421
19	1000.000	250.000
20	455.682	113.921
21	-455.682	-113.921
22	2000.000	500.000
23	-2044.318	-511.079
24	2044.318	511.079
25	-1078.454	-269.613
26	-696.251	-43.516
27	-1300.704	-81.294
28	-2597.523	-162.345
29	-1644.341	-102.771