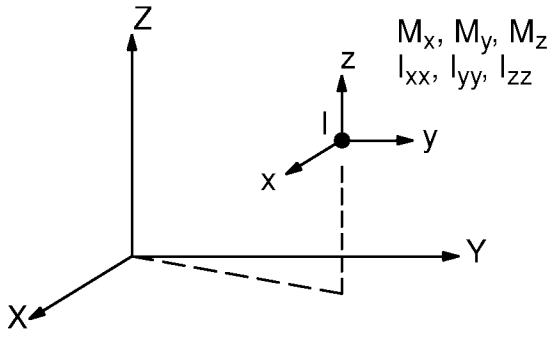
14.21 MASS21 — Structural Mass



Matrix or Vector	Shape Functions	Integration Points
Mass Matrix	None	None

The element mass matrix is:

$$[M_e] = \begin{bmatrix} a & 0 & 0 & 0 & 0 & 0 \\ 0 & b & 0 & 0 & 0 & 0 \\ 0 & 0 & c & 0 & 0 & 0 \\ 0 & 0 & 0 & d & 0 & 0 \\ 0 & 0 & 0 & 0 & e & 0 \\ 0 & 0 & 0 & 0 & 0 & f \end{bmatrix} \qquad (14.21\text{–}1)$$

where a, b, c, d, e, and f are input on the **R** command in the locations shown in the following table:

	KEYOPT(3)=0	KEYOPT(3)=2	KEYOPT(3)=3	KEYOPT(3)=4
a	1	1	1	1
b	2	1	1	1
c	3	1	–	–
d	4	–	–	–
e	5	–	–	–
f	6	–	2	–

For the mass summary, only the first real constant is used, regardless of which option of KEYOPT(3) is used. Analyses with inertial relief use the complete matrix.