```
m1=\{
\{10.8, 0.4, 0, 0\},
\{0.4, 12.8, 0, 0\},
\{0,0,0,0\},
\{0,0,0,0\}
};
m2=\{
\{0,0,0,0\},
\{0, 12.5, .25, 0\},\
\{0, .25, 5.4, 0\},
\{0,0,0,0\}
};
m3 = {
\{0,0,0,0\},
\{0, 41.6, 0, -.4\},\
\{0,0,0,0\},
\{0, -.4, 0, 5.4\}
};
MM = m1 + m2 + m3;
k1 = {
\{(3)(10^{\wedge}(4)), (-3)(10^{\wedge}(4)), 0, 0\},\
\{(-3)(10^{\wedge}(4)),(3)(10^{\wedge}(4)),0,0\},
\{0,0,0,0\},
\{0,0,0,0\}
};
k2 = {
\{0,0,0,0\},
\{0, (5)(10^{\wedge}(4)), (-5)(10^{\wedge}(4)), 0\},\
\{0, (-5)(10^{\wedge}(4)), (5)(10^{\wedge}(4)), 0\},
\{0,0,0,0\}
};
k3 = {
\{0,0,0,0\},
```

```
 \{0, (40)(10^{\wedge}(4)), 0, (20)(10^{\wedge}(4))\}, 
 \{0, 0, 0, 0\}, 
 \{0, (20)(10^{\wedge}(4)), 0, (10)(10^{\wedge}(4))\} 
 \}; 
 KK = k1 + k2 + k3; 
 Eigensystem[\{N[KK], N[MM]\}]
```

 $\{\{25452.3, 9751.13, 3089.21, 0.\}, \{\{-0.0285831, 0.174202, -0.112286, 0.977869\}, \{0.0222436, -0.0494158, 0.975587, 0.212824\}, \{0.975683, 0.174202, -0.112286, 0.977869\}, \{0.0222436, -0.0494158, 0.975587, 0.212824\}, \{0.97568, 0.977869\}, \{0.0222436, -0.0494158, 0.975587, 0.212824\}, \{0.97568, 0.97869\}, \{0.97568, 0.97869\}, \{0.97568, 0.97869\}, \{0.97568, 0.97869\}, \{0.97568, 0.97869\}, \{0.97568, 0.97869\}, \{0.97568, 0.97869\}, \{0.97568, 0.97869\}, \{0.977869\}, \{0.97568, 0.97869\}, \{0.97568, 0.97869\}, \{0.97568, 0.97869\}, \{0.97568, 0.97869\}, \{0.97568, 0.97869\}, \{0.97568, 0.97869\}, \{0.97568, 0.97869\}, \{0.97568, 0.97869\}, \{0.97568, 0.97869\}, \{0.977869\}, \{0.97568, 0.97868\}, \{0.975688, 0.97868\}, \{0.975688, 0.97868\}, \{0.975688, 0.97868\}, \{0.975688, 0.97868\}, \{0.975688, 0.9786$