



- There are 3 masses, thus, the connection matrix will be 3x3
- The connection matrix is a LOWER TRIANGULAR matrix

	M1	M2	M3
M1	K	0	0
M2	0	K	0
M3	K	K	0

For spring

	M1	M2	M3
M1	B1	0	0
M2	0	0	0
M3	0	B2	0

For damper

- Diagonal elements describe connection with static world (see red boxes).
- Other element describe connection between two masses.

- Only B and K are in nxn matrix (blue texts)
- The masses and external forces acting on each mass are written in vectors (red texts)

```
#clear used variables
```

```
K:='K':
```

```
M:='M':
```

```
#setup matrix K and B
```

```
matK:=<K,0,0;0,K,0;K,K,0>:
```

```
matB:=<B__1,0,0;0,0,0;0,B__2,0>:
```

```
matM:=<M__1,M__2,M__3>:
```

```
matF:=<M__1*g(t),M__2*g(t),M__3*g(t)+f__a(t)>:
```

```
#write down the equations
```

```
eq:=mass_spring_damper(3, matM, matK, matB, matF):
```