

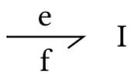
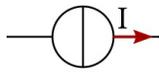
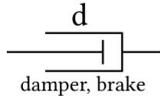
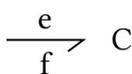
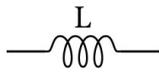
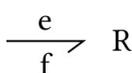
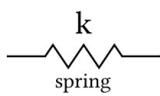
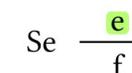
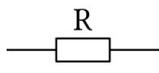
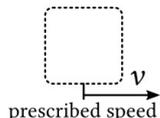
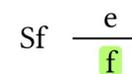
Associating bond graph junctions with series/parallel structures

This exercise should show you the associations which exists between:

- 0/1 junctions in bond graph
- series/parallel structures in electrical circuits or mechanical systems

Reminder: BG elements in electrical and mechanical domains

Associate each bond graph element with its corresponding electrical and mechanical device.

| | Bond graph | Electricity | Mechanics (translation) |
|---|---|---|---|
| 1 |  |  |  |
| 2 |  |  |  |
| 3 |  |  |  |
| 4 |  |  |  |
| 5 |  |  |  |

Association 1: a single 0/1 junction with series/parallel structure

Associate each bond graph with its corresponding series/parallel electrical circuit or mechanical system.

| Bond graph | Electricity | Mechanics (translation) |
|---|-------------|-------------------------|
| 1 $Se \longrightarrow 0 \longrightarrow I$ \downarrow R | | |
| 2 $Se \longrightarrow 1 \longrightarrow I$ \downarrow R | | |

Association 2: combined 0/1 junc. with series/parallel structures

Associate each bond graph with its corresponding electrical circuit or mechanical system.

| Bond graph | Electricity | Mechanics (translation) |
|--|-------------|-------------------------|
| 1 $Se \longrightarrow 0 \longrightarrow 1 \longrightarrow C$ $\downarrow \quad \downarrow$ $I \quad R$ | | |
| 2 $Se \longrightarrow 1 \longrightarrow 0 \longrightarrow C$ $\downarrow \quad \downarrow$ $I \quad R$ | | |