6.3

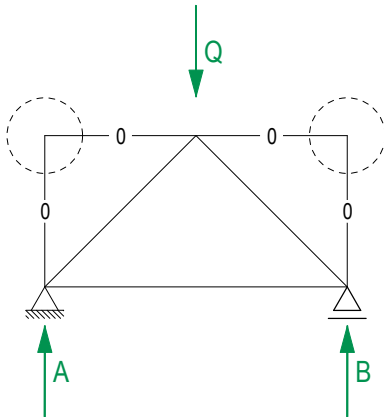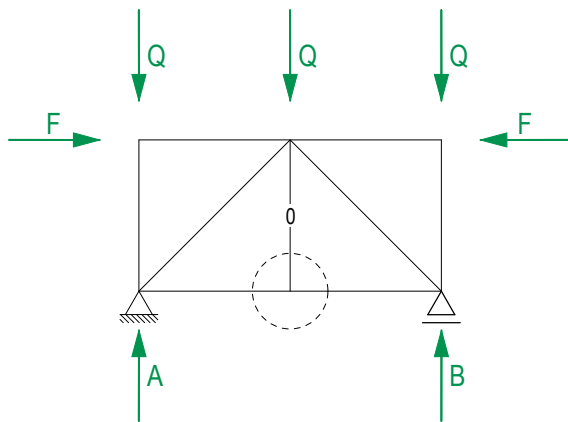## Zero Members

In trusses, certain elements don't take forces under a specific loading case. These elements are called zero members and are marked with "0" in the form diagram. But in general, due to stability reasons they cannot be removed, because as soon as the applied load changes, they will have to take up a force again. Zero members can be distinguished when constructing the force diagram where the local equilibrium in the node can be established even without the said member. The force in the member is zero, which is why there is no line in the force diagram that corresponds to the element in the form diagram. In certain situations, zero members can be identified even before the construction of the force diagram. There are three different rules for this:
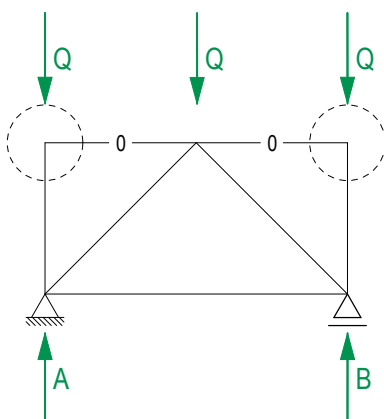

Node without force – two bars

If two bars with different directions meet, both are zero members.

Node without force – three bars

If two of the three bars are in the same direction, the third is a zero member.

Node with force – two bars

If the load attacks in the direction of one bar, the other is a zero member.