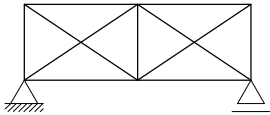
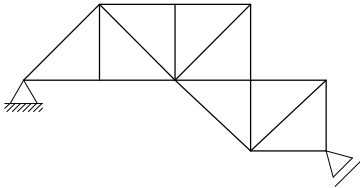
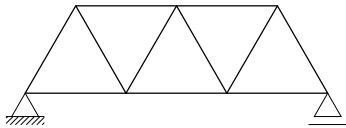


Task 1 Internal Statical Determinacy

Determine the degree of the internal statical determinacy for each form diagram.

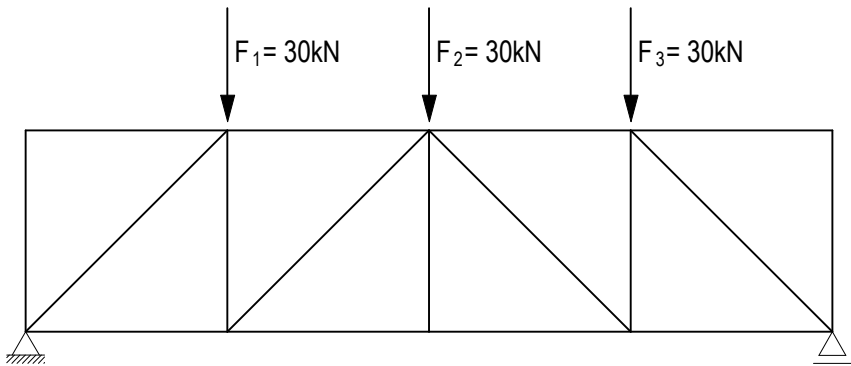


Task 2 Spanning Truss

The given truss is an internally statically determinate system spanning between two supports. Analyse the truss for the given loading case by following a series of steps:

- a) Find the global equilibrium.
- b) Identify possible zero members.
- c) Analyse the internal forces node by node and complete the force diagram. Indicate tension forces with red, compression forces with blue and external forces with green.

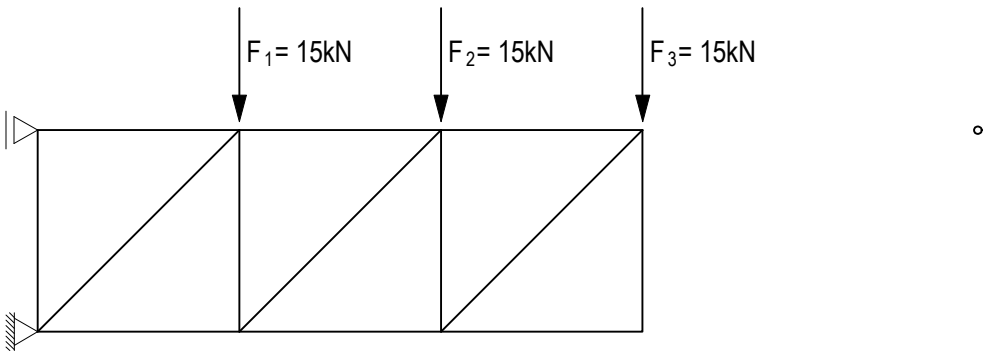
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Task 3 Cantilevering Truss

The given cantilever is an internally statically determinate truss. Analyse the truss for the given loading case by following a series of steps:

- a) Find the global equilibrium.
- b) Identify possible zero members.
- c) Analyse the internal forces node by node and complete the force diagram. Indicate tension forces with red, compression forces with blue and external forces with green. Determine the relevant tension and compression force within the truss and write down the values in the table.



form diagram 1:100

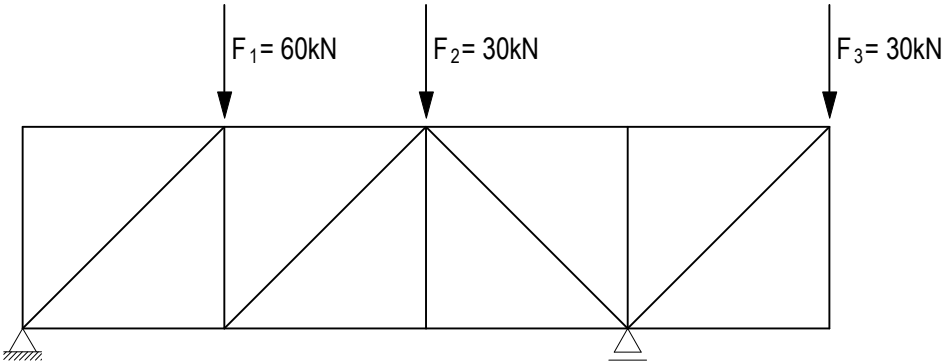
	F _{c,max}	F _{t,max}
Force [kN]		

force diagram 1cm ≙ 10kN

Task 4 Combined Truss

The given truss is a combination of a span and cantilever. It is an internally statically determinate system. Analyse the truss for the given loading case by following a series of steps:

- a) Find the global equilibrium with the help of the force diagram.
- b) Identify possible zero members.
- c) Analyse the internal forces node by node and complete the force diagram. Indicate tension forces with red, compression forces with blue and external forces with green.



form diagram 1:100

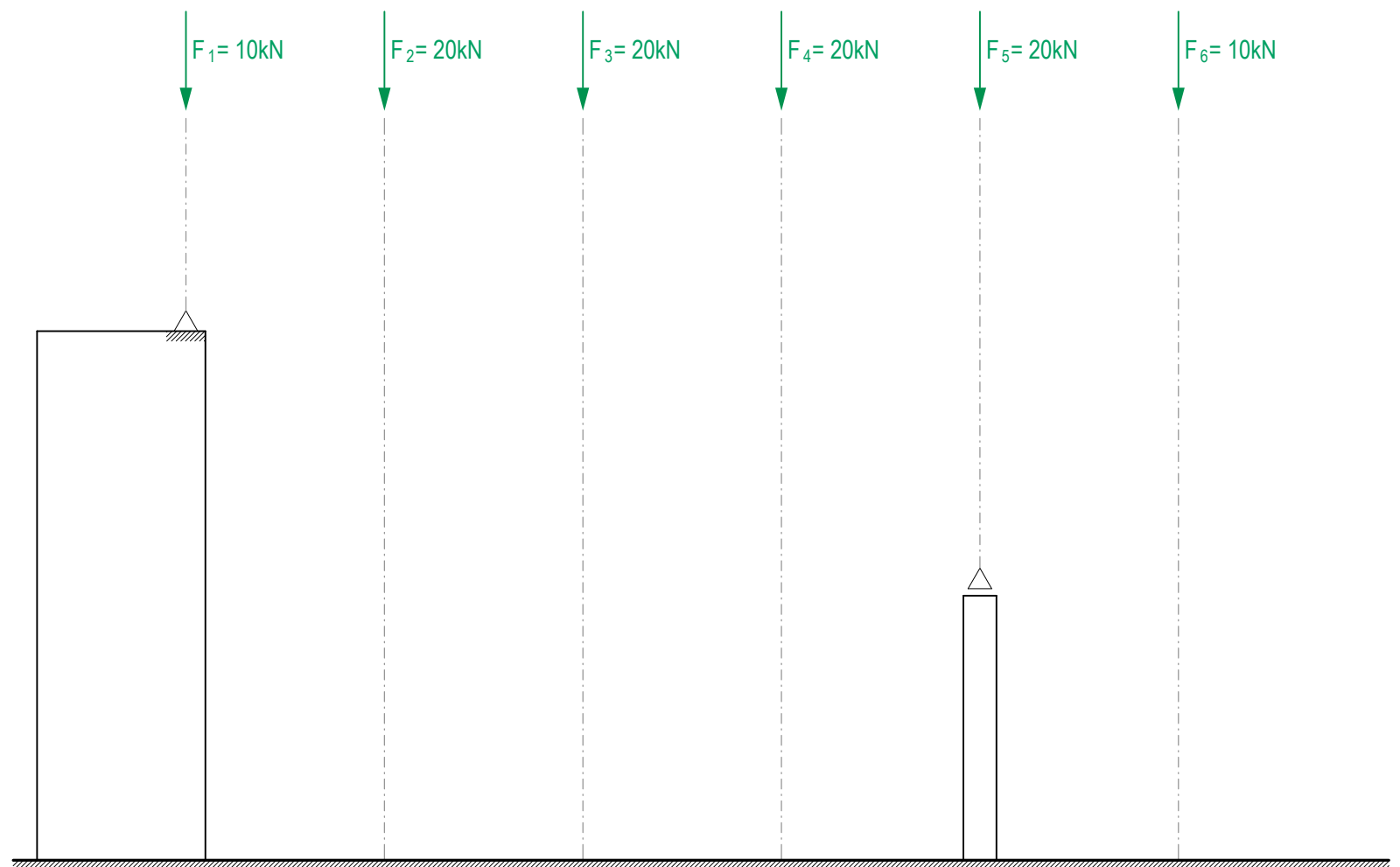
force diagram 1cm ≙ 10kN

Creative Task **Designing a Greenhouse Roof**

Design a lightweight structure for a greenhouse. The roof cover made out of glass is to be placed on a truss structure to enable a maximum solar gain in the interior. The two given columns act as supports for the roof.

First, sketch a possible form of the roof under the given point loads into the form diagram. Check whether your truss is statically determinate.

Then, find the global equilibrium and complete the corresponding force diagram with all the truss elements. Indicate tension forces with red, compression forces with blue and external forces with green.



form diagram 1:100

force diagram 1cm $\hat{=}$ 10kN