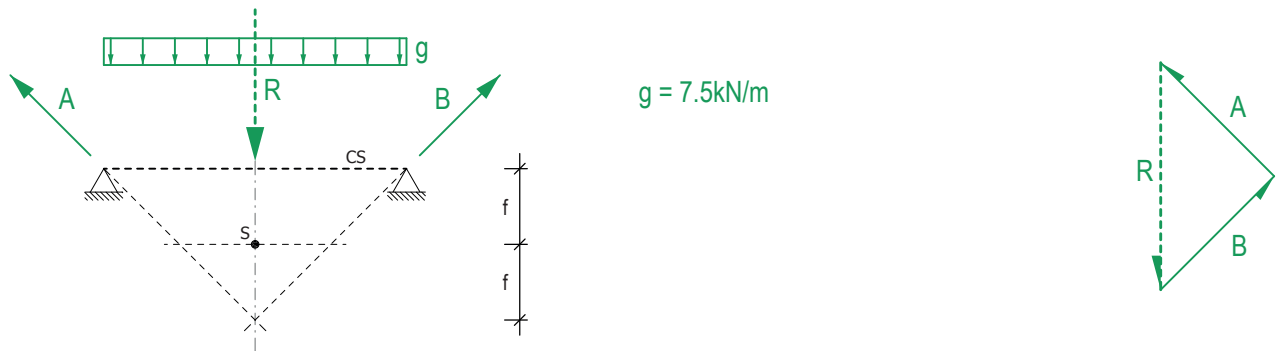


3.2

Parabola

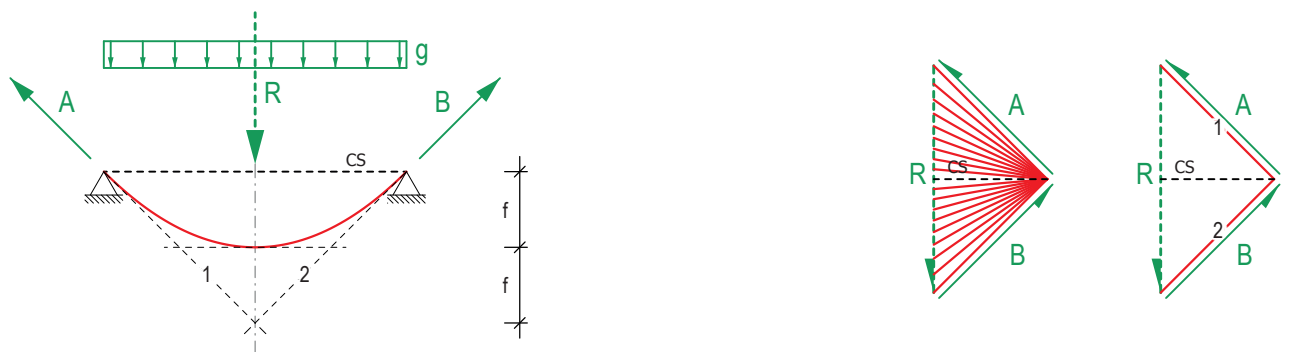
Under a uniformly distributed load, a parabola forms. This is constructed as follows:

First the resultant is calculated and the global equilibrium is drawn in the force diagram. Then the outermost tangents to the curve are determined; their magnitude and inclination correspond to the reaction forces. Both elements intersect on the line of action of the resultant. The distance from the tangent intersection point to the connection of the two supports (so-called *closing string*) corresponds to twice the height f of the parabola. As a third tangent to the curve, the closing string is shifted parallel through the vertex S of the parabola.

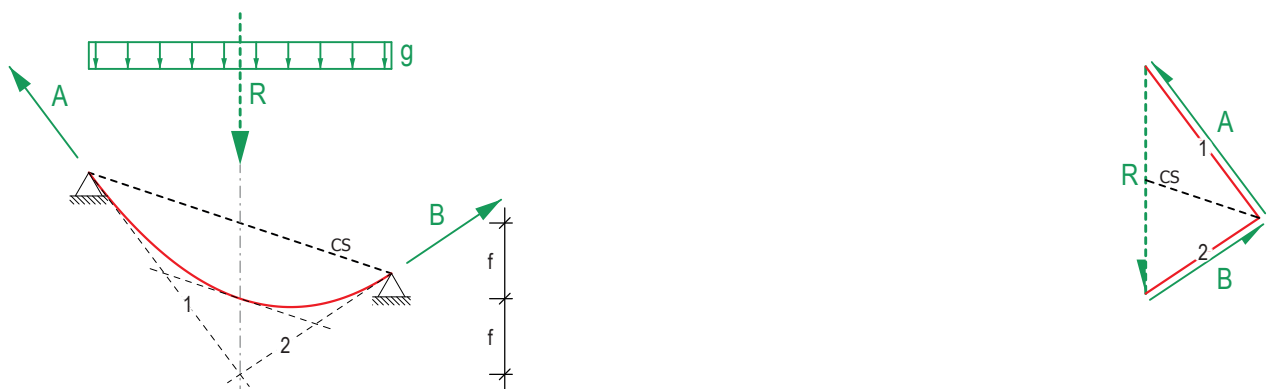


With the visual help of the three tangents the curve can be drawn into the form diagram by hand.

In the force diagram only the outermost tangents are shown, since the forces in the structure are largest directly at the supports.



In case of an asymmetrical position of the supports, the resultant is calculated again and the global equilibrium is drawn in the force diagram. It is important that the closing string is shifted parallel along the line of action of the resultant up to the vertex of the parabola. Then the curve can be drawn into the form diagram by hand by following the three tangents.



form diagrams 1:100

force diagrams $1 \text{ cm} \triangleq 10 \text{ kN}$