Example: Continuous beam with a hinge
Objective: Draw BMDs and SFDs by recognizing basic cases from the formula sheet


Beam BC acts exactly like a simply supported beam, supported without moment restraint at B and C :


Beam AB acts exactly like a cantilevered beam with a point load at the tip; that point load is the shear force from the adjacent beam BC :


BID:


$$
V=\frac{\Delta M}{L}=\frac{30}{4}=7.5 \mathrm{kM}
$$

That means the complete section force diagrams are:

BID:


