1. A steel column is used in an application as shown below. The column is fixed at the base and is tied down by guy cables on either side. The Guys have a tension of 400 kN each and are at an angle of 60° to the ground. A load \( P = 50 \text{ kN} \) is applied at a height of 6m from the ground.

- Check whether the section is O.K.
- If after 6 months, one of the guy cables snaps, will the column be O.K.? If not, what section size would be satisfactory?

2. Find an adequate size for column AB in the following frame. \( M_A = 200 \text{ kN-m}, M_B = 300 \text{ kN-m}, P = 1000 \text{ kN}, V = 75 \text{ kN} \) (consider them as final values including all effects).

Each bay of the frame is 8m wide. Each story is 3m high. All the beams are W460x106. All beam to column joints are rigid in the plane of the paper and hinged in the plane perpendicular to the paper. (This means that the actual effective length factor for the plane of the frame must be computed using Appendix G where as the factor will be as per Appendix F for the other direction). Try W310x--- range of sections for the column, if possible (W310x129 / 118/ etc.)