# Rotational Mobile

Apply what you know about torques by making a mobile. Shown below are five horizontal arms with fixed 1- and 2-kg masses attached, and four hangers with ends that fit in the loops of the arms, lettered A through R. You are to figure where the loops should be attached so that when the whole system is suspended from the spring scale at the top, it will hang as a proper mobile, with its arms suspended horizontally. **This is best done by working from the bottom upward.** Choose the loops where the hangers should be attached. You may assume the horizontal struts and connecting hooks are practically massless compared to the 1- and 2-kg masses.
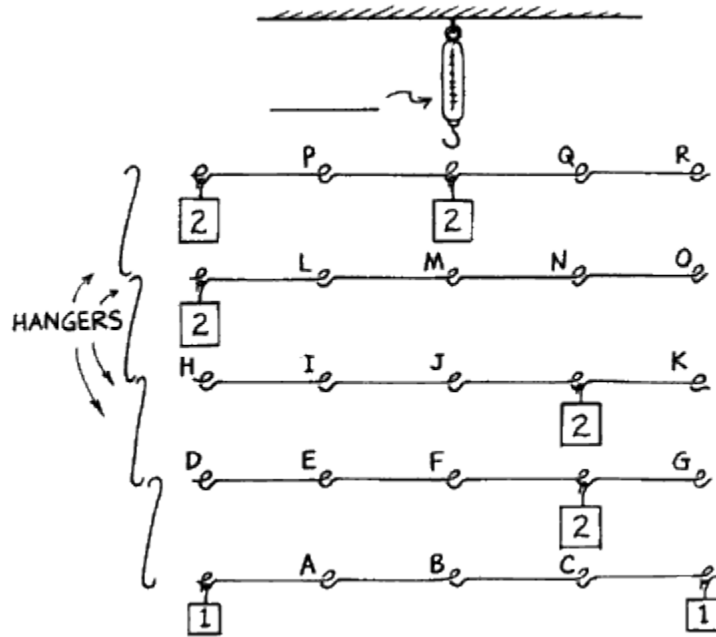
Present your solution on a separate sheet of paper by making a sketch of your completed mobile.

1. You would connect point _____

   ○ D ○ E ○ F ○ G

2. to point _____.

   ○ A ○ B ○ C

3. You would connect point _____

○ H ○ I ○ K ○ K

4. to point _____.

○ D ○ E ○ F ○ G
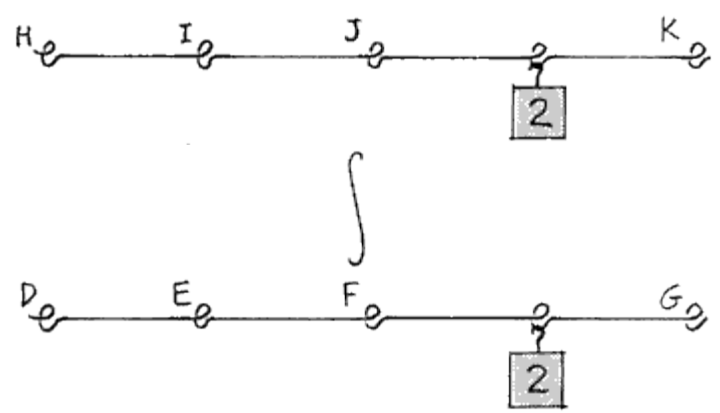
middle level

5. You would connect point _____

○ L ○ M ○ N ○ O

6. to point _____.

○ H ○ I ○ K ○ K
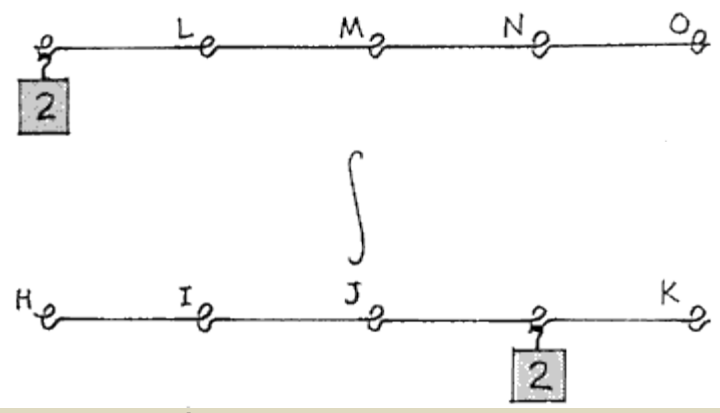
next to top level

7. You would connect point _____

○ P ○ Q ○ R

8. to point _____.

○ L ○ M ○ N ○ O
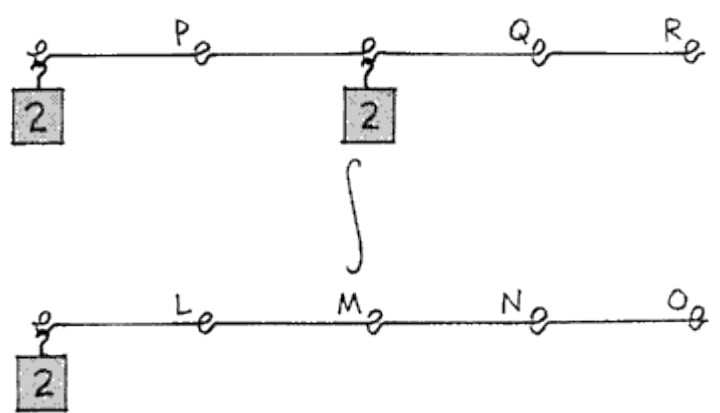
top level
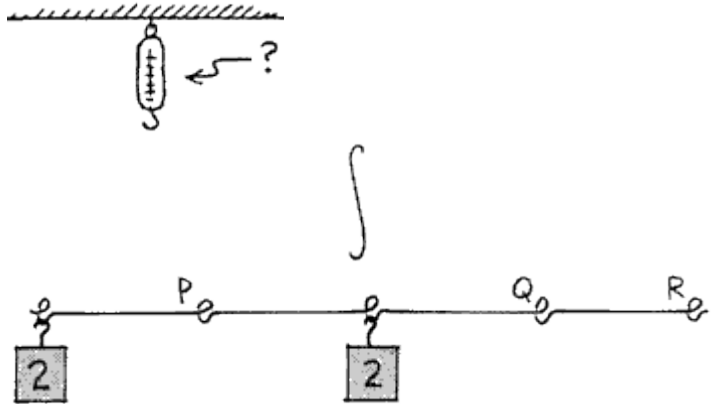
9. The spring scale should be connected to point _____.

    ○ P   ○ Q   ○ R

10. Now that your mobile is complete, how many newtons would be indicated on the spring scale? [   ]