

Puzzle 9: Karmic Balance

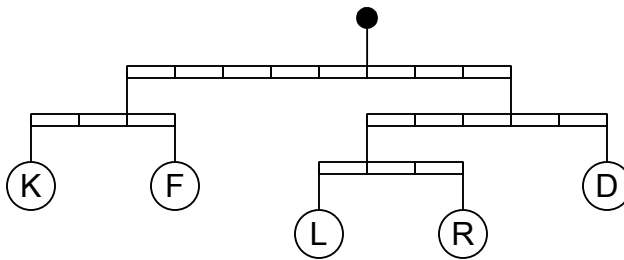
Some people prefer to believe that the universe is ruled by karma rather than luck; that your good and bad deeds from the past will ultimately be balanced out by good and bad fortune in the future. I won't pass judgment on such ideas, but I will give you a puzzle with some balancing acts in mind.

Within each system of scales below, the goal is to assign unique positive integer values to the hanging weights such that all of the beams will balance perfectly horizontally (weight values may be repeated in separate assemblies, but not within a given problem). In the first two assemblies the beams are assumed to have no weight, but in the second two the beams are assumed to have a weight of 1 per unit length.

I'll let you puzzle over what to do after you have met the constraints of each assembly and balanced the beams. Good luck. I hope everything works out for you in the end.

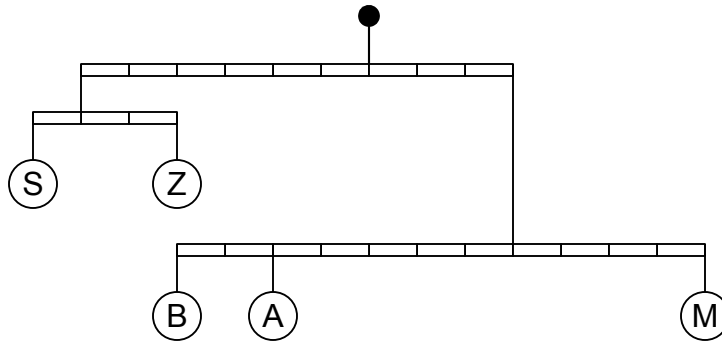
Assembly 1

Balance it all by assigning unique, whole number values to weights. The values of the weights must be between 1 and 10. The beams in this assembly are assumed to be weightless.



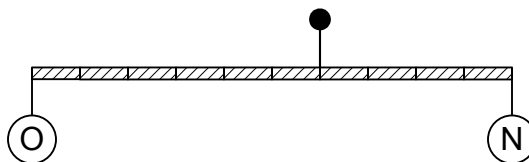
Assembly 2

Balance it all by assigning unique, whole number values to weights. The values of the weights must be between 1 and 20. The beams in this assembly are assumed to be weightless.



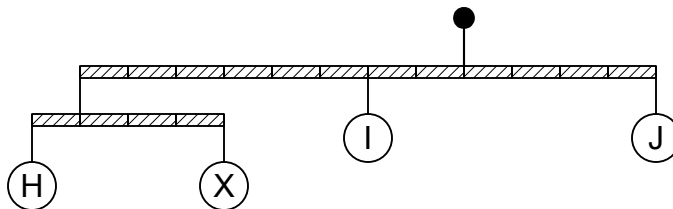
Assembly 3

Balance it all by assigning unique, whole number values to weights. The values of the weights must be between 1 and 5. The beam weighs one unit per section.



Assembly 4

Balance it all by assigning unique, whole number values to weights. The values of the weights must be between 1 and 31. The beams weigh one unit per section.



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