The KC Office Puzzle

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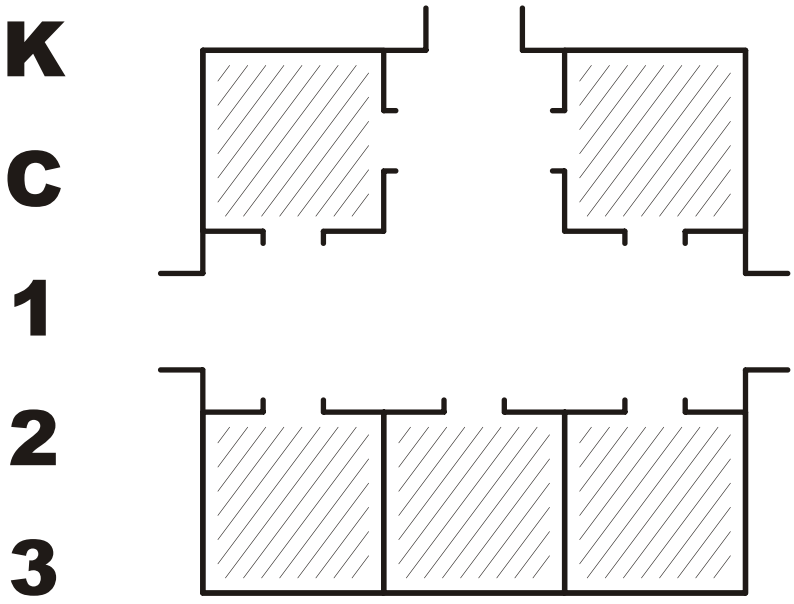
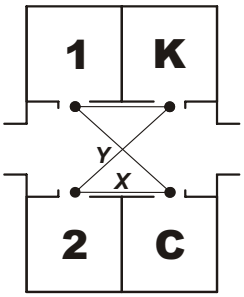


Example



A company has just rented a new floor in the building. The five-room floor, shown in the center, is designated for the company's new analytical department, consisting of 6 employees. Under the plan employees should be distributed among three rooms in ratio 1:2:3, the fourth room should be the Copier room (C), and the fifth one - the Kitchen (K).

Company's top management appointed its Chief office planner (COP) to organize the floor in such a way that the sum of the distances (door-to-door) per employee from his/her room to the Kitchen is the longest possible, while the sum of the distances per employee from his/her room to the Copier room is the shortest possible. In the four-room floor *Example* the sum of the distances from the employees' rooms to K is 1*X+2*Y, while the sum of the distances to C is 1*Y+2*X. Since Y is approx 1.4X, the sum of the distances to K is approximately 3.8 units and to C - 3.4, which is not necessarily the optimal solution. Can you help COP to solve this **Puzzle 1** for the five-room floor?

Meanwhile, being a staunch union member in the past, COP quickly persuaded the management to put aside that floor plan. To make the kitchen closer to the folks, he suggested a new floor plan arguing it would raise the labor productivity. Under it the floor has to be designed in such a way that the sum of the distances to K when added to the sum of the distances to C would produce the least possible final distance. In the four-room floor *Example* the final distance is 7.2 units (3.8+3.4), which is not the least one for the floor. Can you help COP to solve this **Puzzle 2** for the five-room floor?