

You are the manager of a store and must plan which items to order to be put on sale for the next summer. You can order sunglasses, swimsuits (costumi da bagno) or umbrellas. Assume you can order now some lots of sunglasses, swimsuits and umbrellas; you are in charge of deciding how many lots to buy for each kind of merchandise (i.e., you must choose the quantities). Every lot costs 100 (a bunch of sunglasses costs 100, a bunch of swimsuit costs 100, a bunch of umbrellas cost 100).

You realize that weather can make a difference as, say, a sunny summer will increase the sales of sunglasses and swimsuits but you'll suffer losses due to unsold umbrellas. Assume that next summer can be sunny, just fair or rainy.

	sunglasses	swimsuit	umbrellas
hot summer	120	130	85
fair summer	100	95	105
rainy summer	90	85	120

- (1) Does the previous matrix well represent the setting described above?
- (2) The president of the chain told you that revenues have to be kept constant at 100, regardless of the weather. In other words, the boss would like to see a constant vector of revenues of $(100,100,100)'$. Can you achieve such a goal (at least in theory)? How?
- (3) Do you see practical difficulties in achieving that goal?

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