

# Lesson 8. Long and Short-term Planning

An easy-to-follow explanation of what exactly the MRP formula means, and with an everyday application.

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# The MRP formula of net needs

You live with four friends in a student apartment, and the issue of beer is a serious matter.

You are organising a party for next weekend, which will have a total of 15 guests. From your experience, each person drinks, on average, 4 bottles at a party, so the first think that comes to mind is that you need  $15 \times 4 = 60$  bottles of beer:

You open the fridge, and you can see 41 bottles of beer:

**TOTAL STOCK = 41 BOTTLES**

A flatmate says: if we buy 20 bottles, that will be enough, but you, who have studied operations management with Emilio, know that the answer must be more complex.

Angel remembers that, of the bottles in the fridge, 16 are committed to a football match party you are going to hold in the apartment tomorrow, so you cannot count on those:

**ASSIGNED STOCK = 16 BOTTLES**

# The MRP formula of net needs

In addition, Luis, another flatmate, is shopping at Mercadona and has 20 bottles of beer on his shopping list:

**PROGRAMMED DELIVERIES = 20 BOTTLES**

Fernando, the fourth flatmate, remembers that all of you agreed that there could never, I repeat, never, be less than 12 bottles in the fridge, no matter what.

**→ SAFETY STOCK = 12 BOTTLES**

# The MRP formula of net needs

Summarising the data you have obtained so far:

SAFETY STOCK = 12 BOTTLES

GROSS NEEDS = 15 PEOPLE X 4 BOTTLES/PERSON = 60 BOTTLES

PROGRAMMED DELIVERIES = 20 BOTTLES

TOTAL STOCK = 41 BOTTLES

ASSIGNED STOCK = 16 BOTTLES

SAFETY STOCK = 12 BOTTLES

If you correctly remember the formula:

NET NEEDS = GROSS NEEDS - PROGRAMMED DELIVERIES - (ACTUAL STOCK - ASSIGNED STOCK - SAFETY STOCK)

# The MRP formula of net needs

NET NEEDS = GROSS NEEDS - PROGRAMMED DELIVERIES - (ACTUAL STOCK - ASSIGNED STOCK - SAFETY STOCK)

Net needs = GN - PD - (AS - AS - SS) = 60 - 20 - (41 - 16 - 12) = 27 BOTTLES

You should buy 27 more bottles. Thus, in the fridge you have 41 bottles, minus 16 (already assigned) and minus 12 (safety stock) = 13 bottles that you can count on, plus 20 that are on their way, in total 33 bottles, but you need 60 bottles for the party, so you should buy 27 more.