## MRP Exercices

Consider P1 product with the hereafter bill of material


|  | P1 | E1 | E2 | C1 | C2 | C3 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Lead time | 1 | 2 | 1 | 2 | 1 | 2 |
| Achievement | assembling | assembling | assembling | purchase | manufacturing | Purchase |
| Starting <br> inventory | 20 | 10 | 15 | 100 | 50 | 1550 |
| Lot size | 80 | 200 | 50 | 1000 | 250 | 200 |

## Question 1

$1^{\circ}$ We have to deliver P1 in week 10. If inventories are equal to zero considering all items, when have we to be supplied with C1 ?
$2^{\circ}$ To assemble 100 units of P1, how many units of C1 do we need?

## Question 2

Please fill the hereafter table knowing that 100 units is the batch size and safety stock is $20 \%$ of the demand

|  | time | W1 | W2 | W3 | W4 | W5 | W6 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Sales <br> forecasts | Dt | 70 | 90 | 120 | 60 | 40 | 100 |
| Safety <br> stock | SSt | 14 | 18 |  |  |  |  |
| inventory | SIt | 110 | 40 |  |  |  |  |
| Net <br> demand | DNt | 0 | 68 |  |  |  |  |
| Expected <br> delivery | LAt | 0 | 100 |  |  |  |  |

$1^{\circ}$ What is inventory value in week 6 ?
$2^{\circ}$ What is expected delivery in week 5 ?
$3^{\circ}$ What is net demand during week 6 ?

