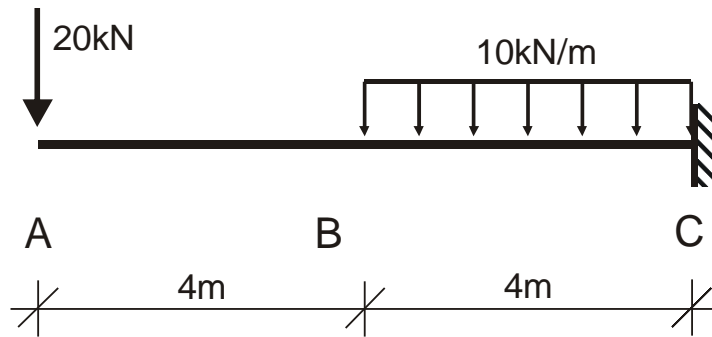


2ª Lista de diagramas de esforços solicitantes

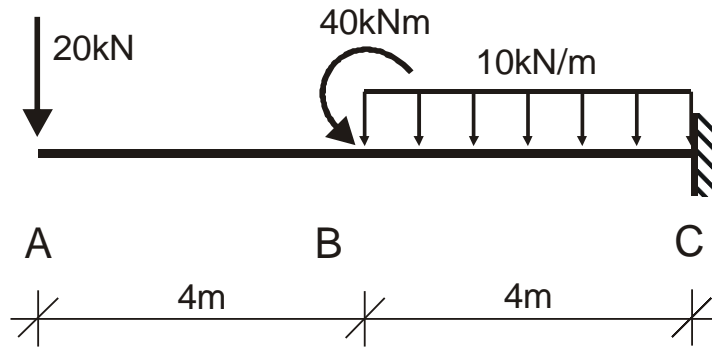
1) Traçar os diagramas de forças cortantes das vigas da figura calculando os valores das forças cortantes em:

a) 3 pontos

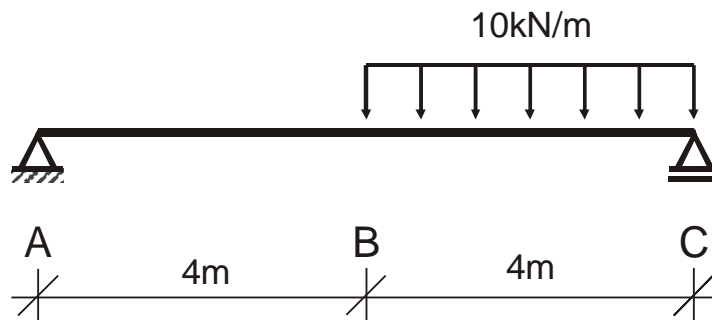
1.1)



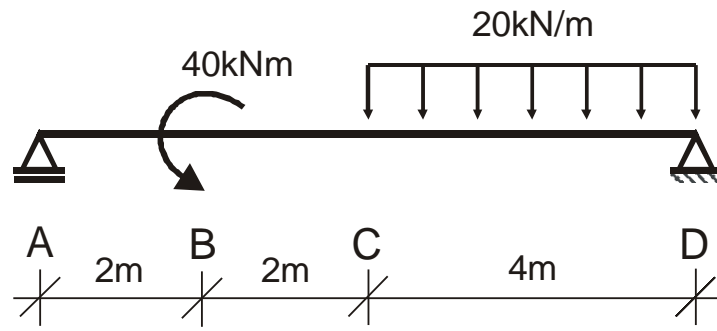
1.2)



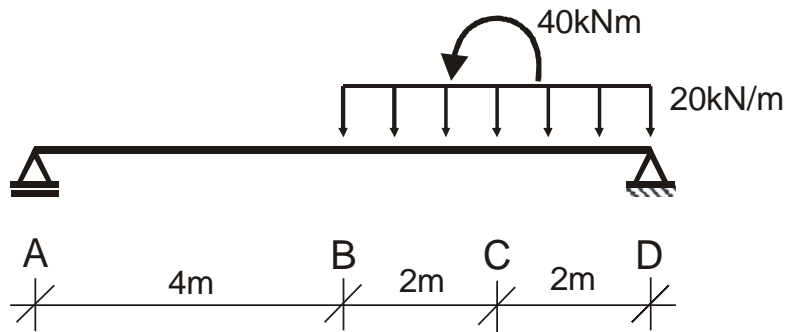
1.3)



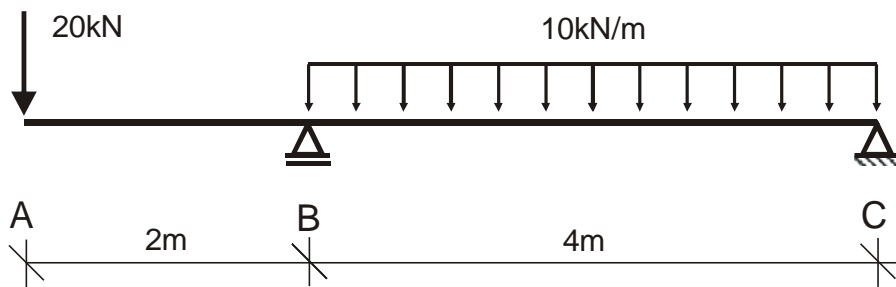
1.4)



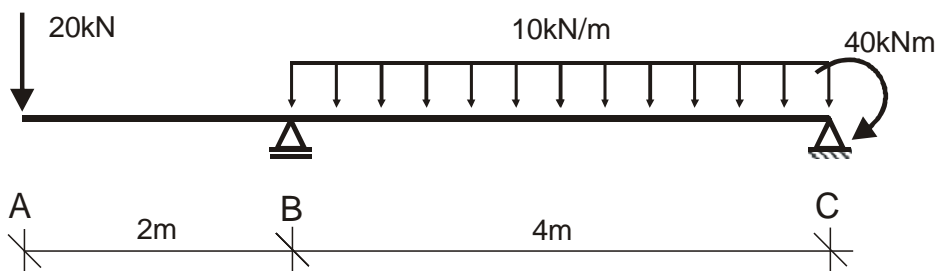
1.5)



1.6)



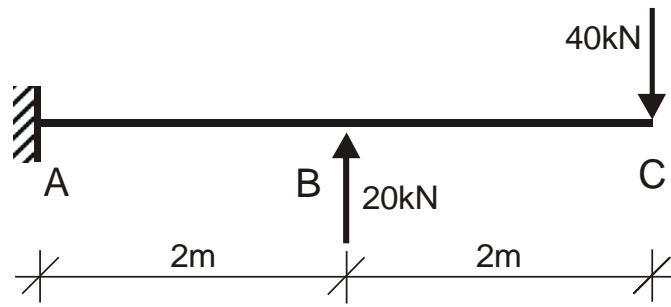
1.7)



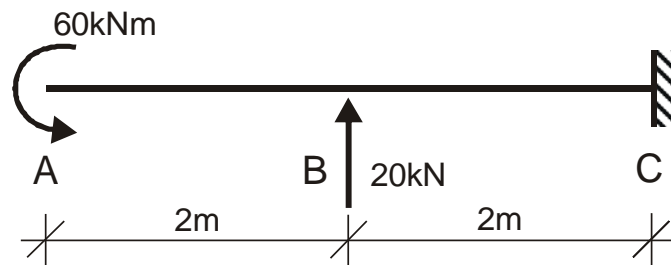
2) Traçar os diagramas de momentos fletores das vigas da figura calculando os valores dos momentos em:

a) 3 pontos

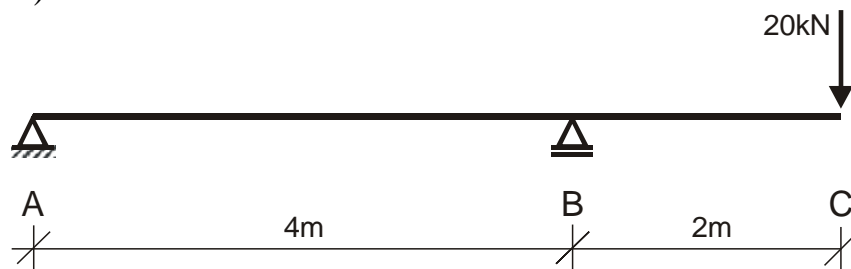
2.1)



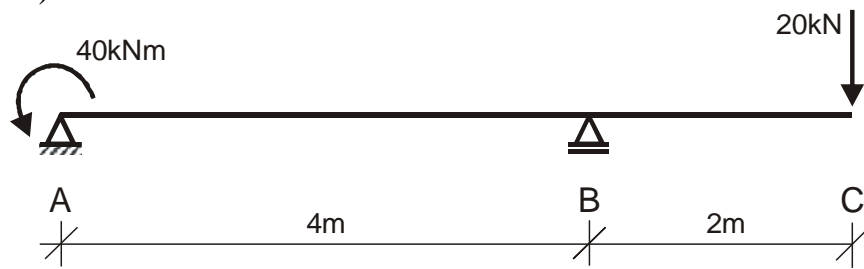
2.2)



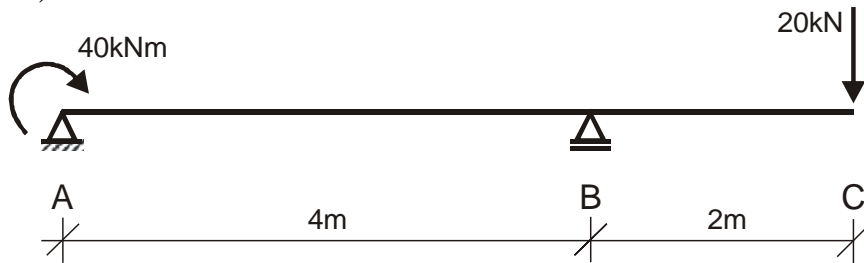
2.3)



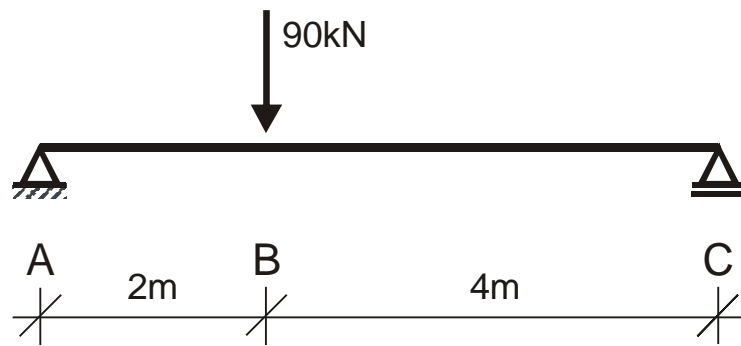
2.4)



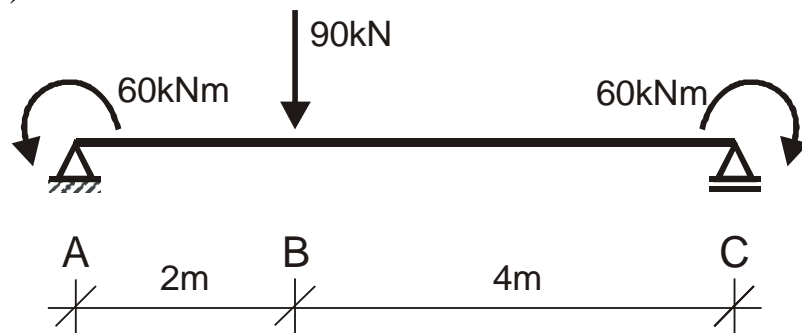
2.5)



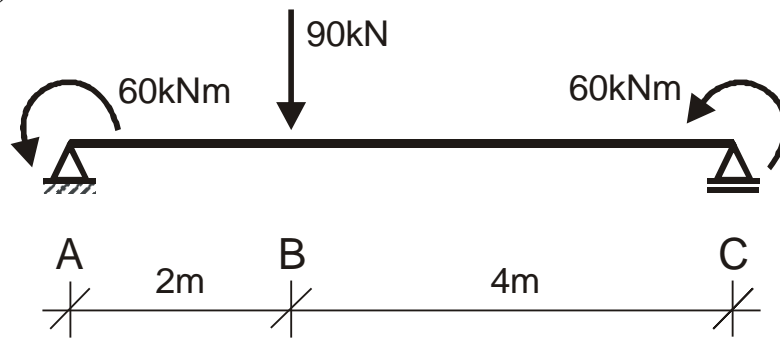
2.6)



2.7)

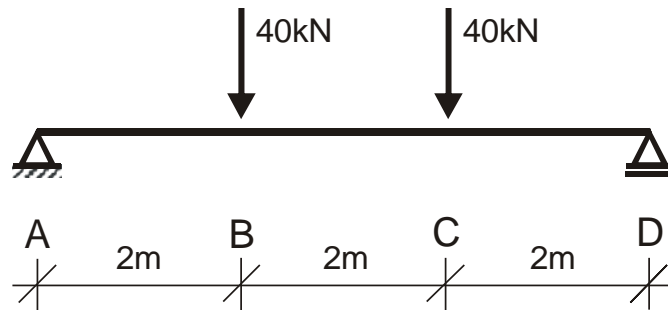


2.8)

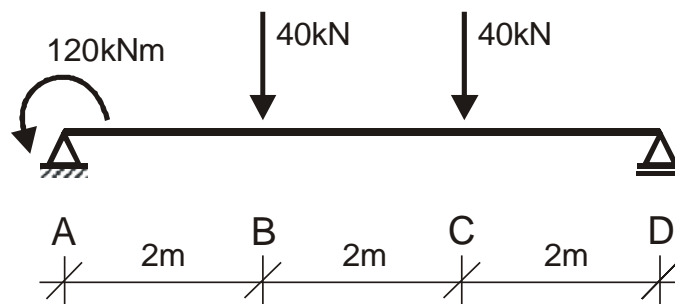


b) 4 pontos

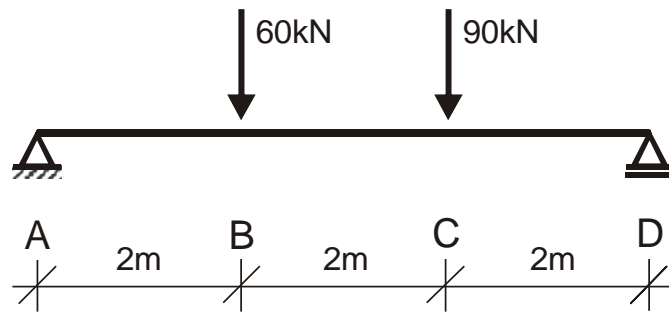
2.9)



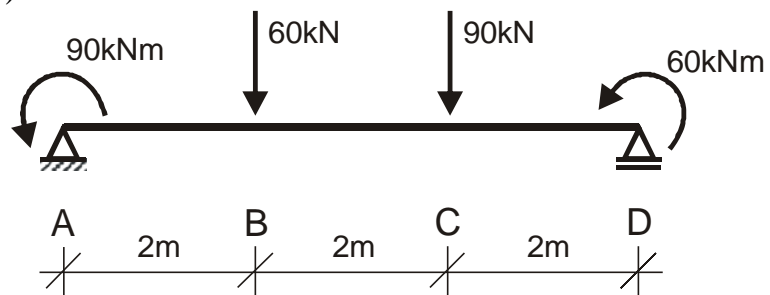
2.10)



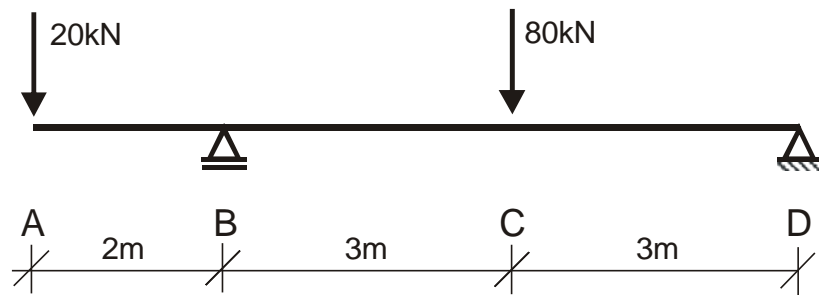
2.11)



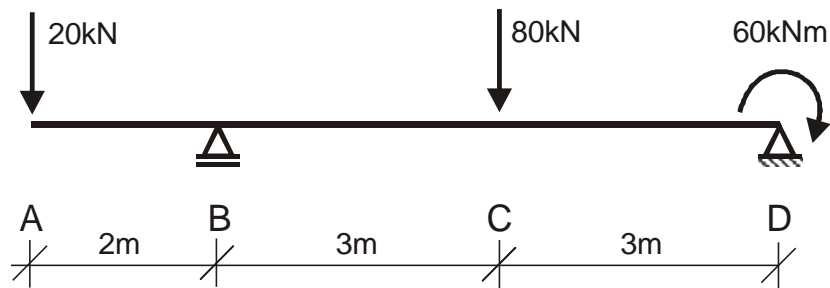
2.12)



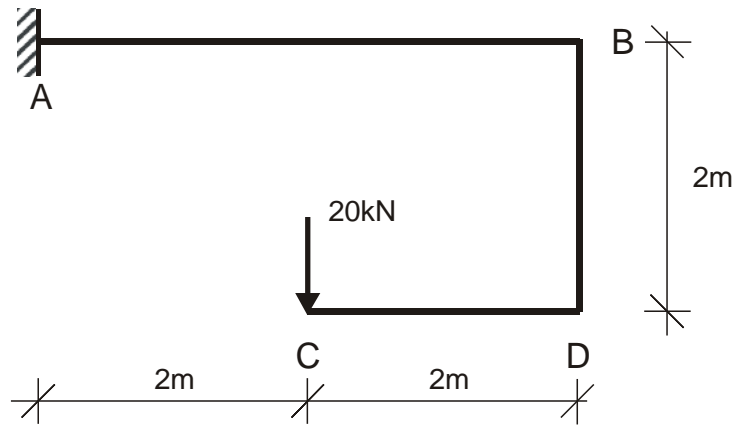
2.13)



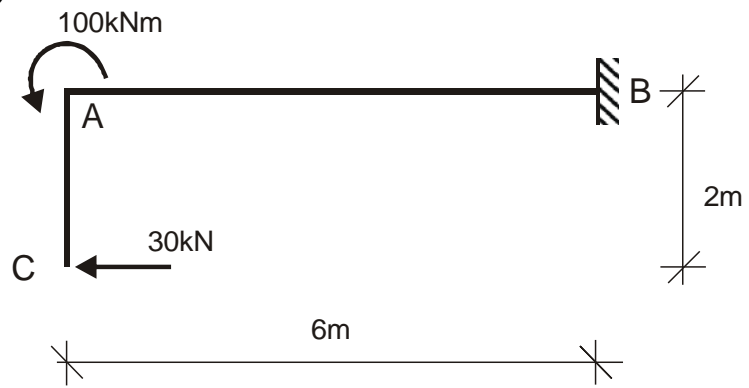
2.14)



2.15)



2.16)

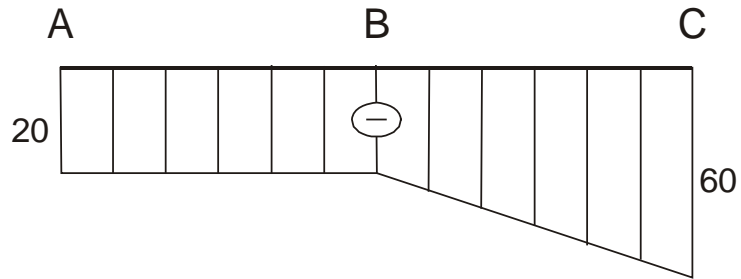


Respostas:

1) Diagramas de forças cortantes:
(Obs.: todos os valores estão em kN)

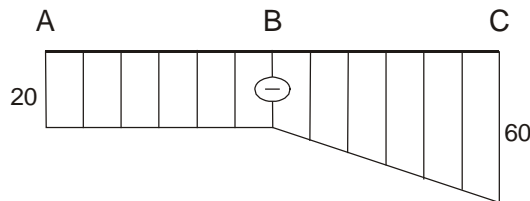
a) a partir de 3 pontos

1.1)

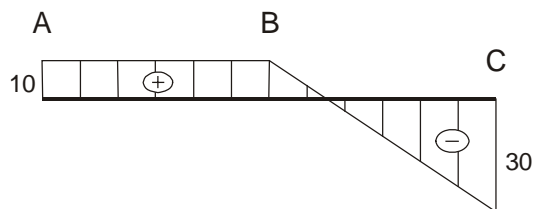


Nos trechos em que não há carregamentos distribuídos, a força cortante é constante; nos trechos em que há carregamentos uniformemente distribuídos, a força cortante varia linearmente. Sendo assim, novamente basta calcular a força cortante nos pontos A, B e C e ligá-los por segmentos de retas.

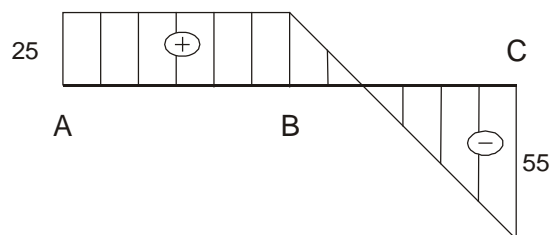
1.2)



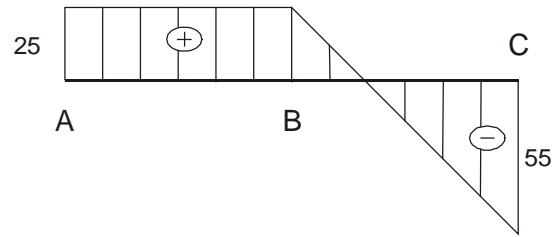
1.3)



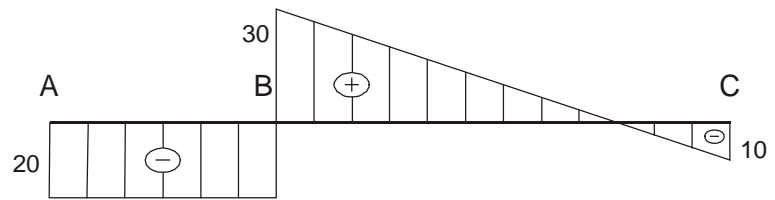
1.4)



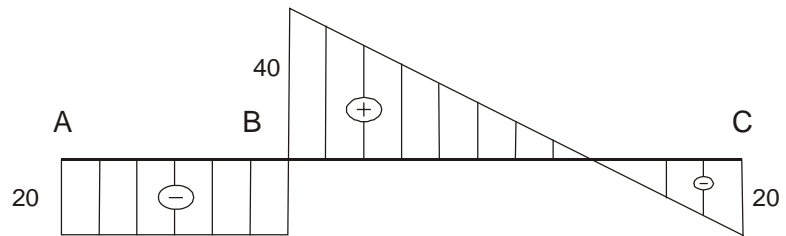
1.5)



1.6)



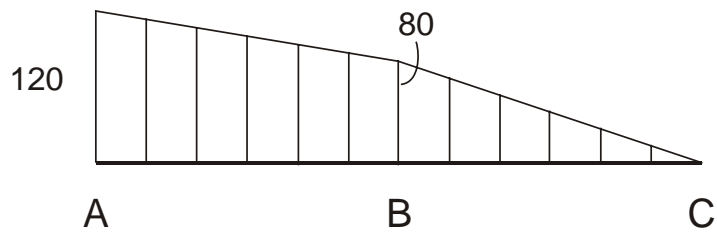
1.7)



2) Diagramas de momentos fletores:
(Obs.: todos os valores estão em kNm)

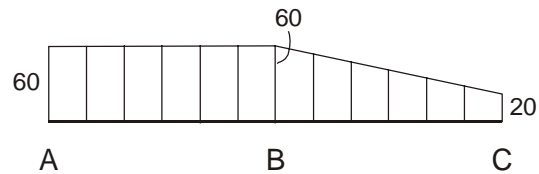
a) a partir de 3 pontos

2.1)

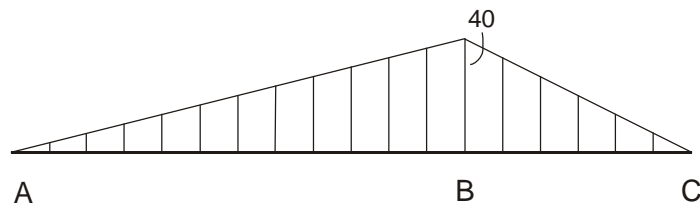


Sabemos que quando só há forças e/ou momentos concentrados aplicados na barra, o diagrama de momentos fletores varia linearmente. Portanto basta calcularmos o momento fletor nos pontos A, B e C, e assim, tendo os momentos fletores nesses três pontos, basta ligá-los com segmentos de reta.

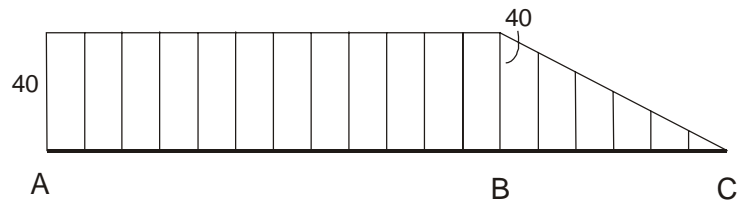
2.2)



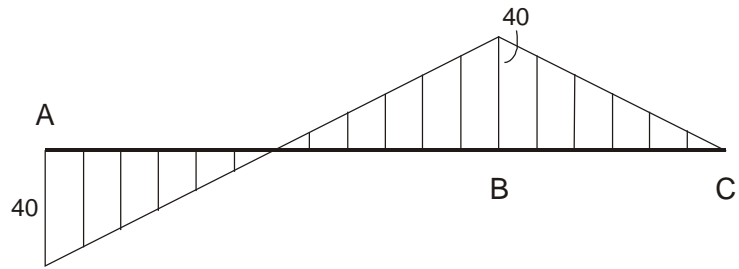
2.3)



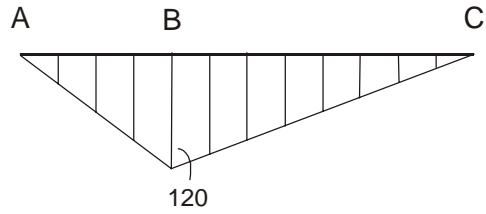
2.4)



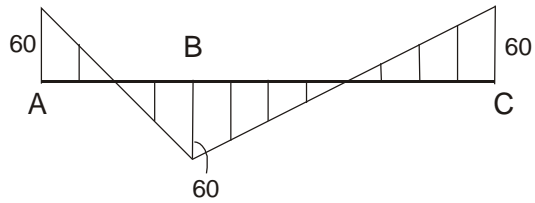
2.5)



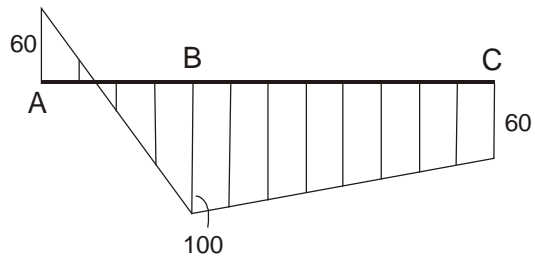
2.6)



2.7)

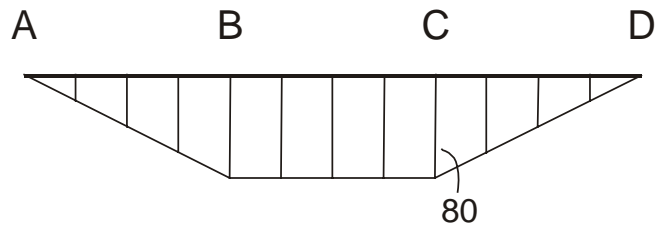


2.8)



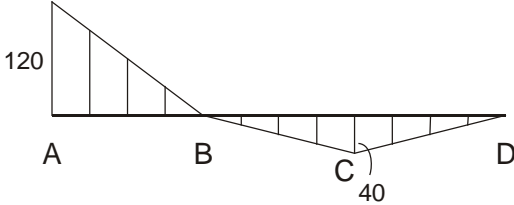
b) a partir de 4 pontos

2.9)

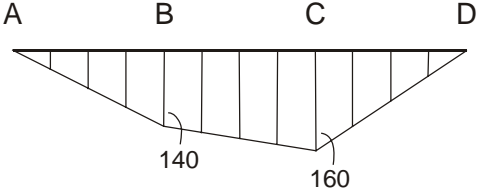


Igualmente como em 3 pontos, basta calcular o momento fletor nos pontos A, B, C e D e ligá-los por segmentos de reta. Novamente isso é possível, pois só há forças e/ou momentos aplicados.

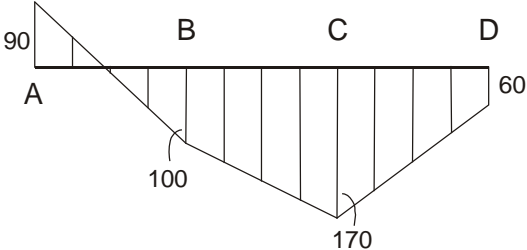
2.10)



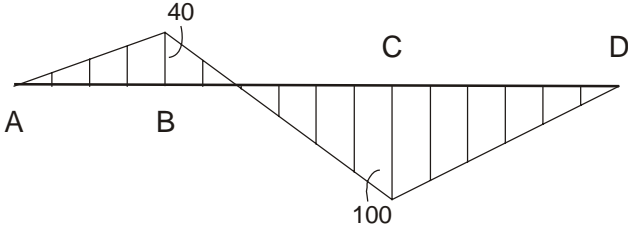
2.11)



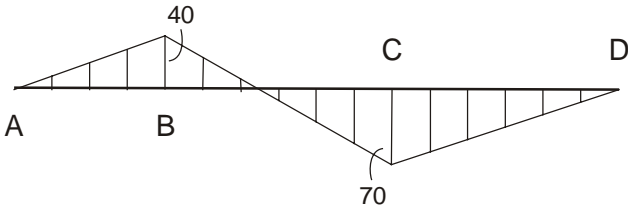
2.12)



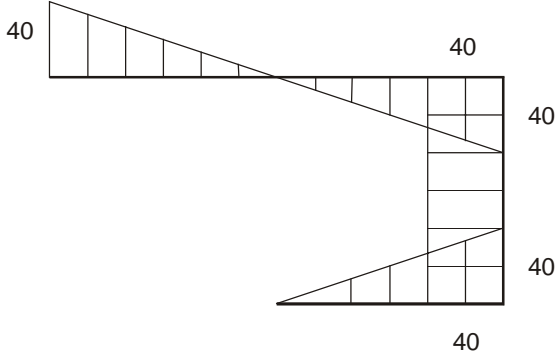
2.13)



2.14)



2.15)



2.16)

