



**Universidade de São Paulo  
Escola de Engenharia de São Carlos  
Departamento de Engenharia Mecânica**

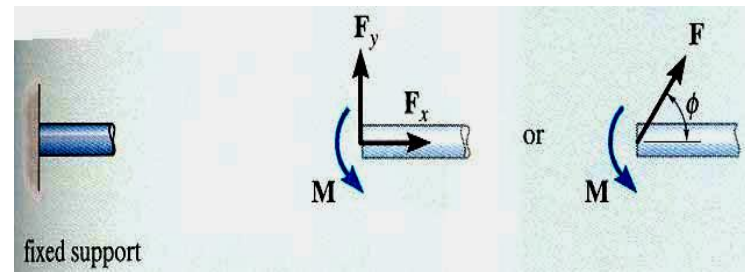
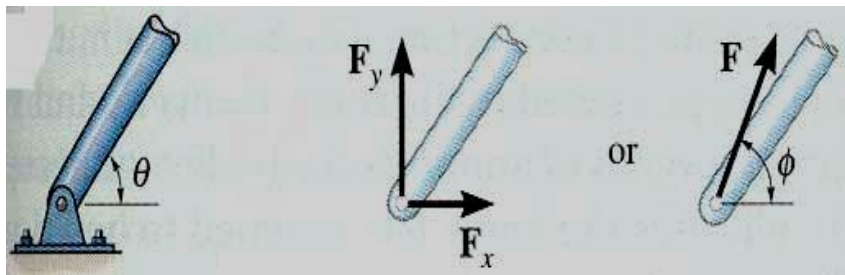
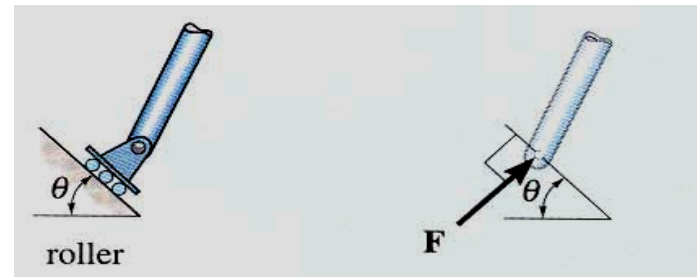
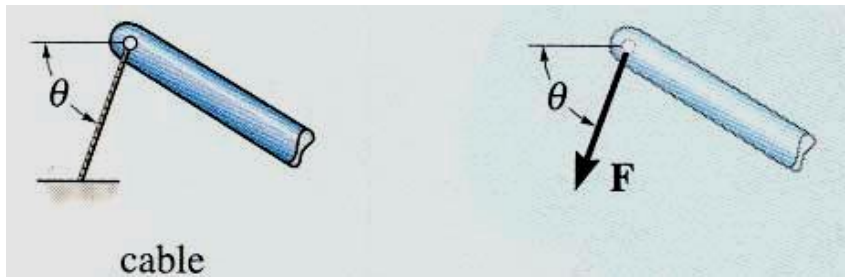
**SEM0500 - Estática**

***Equilíbrio 2D***

***Maíra Martins da Silva***

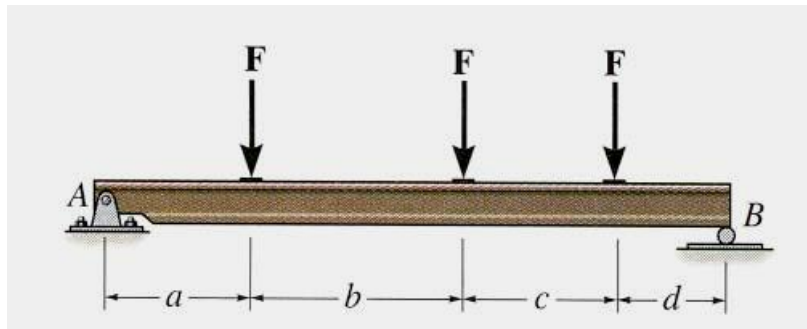
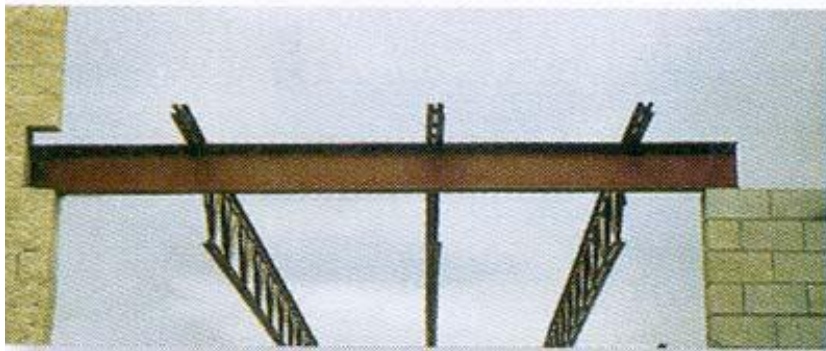
# Suportes

- REGRA: Grau de liberdade removido  $\rightarrow$  força de reação



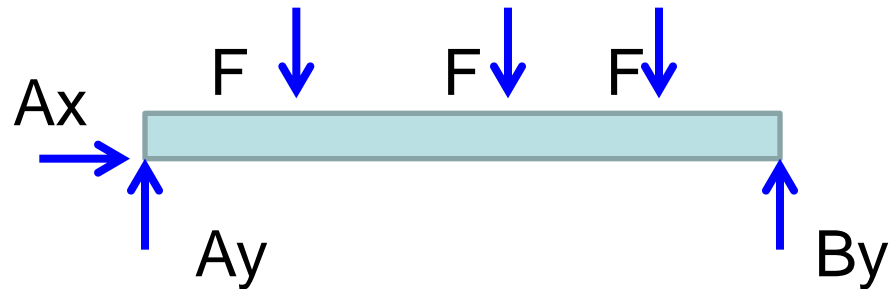
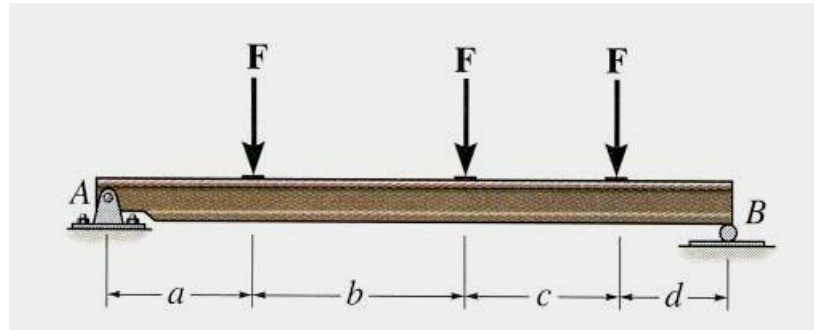
# Diagrama de Corpo Livre ...

- Vamos tentar desenhar o DCL desses exemplos:



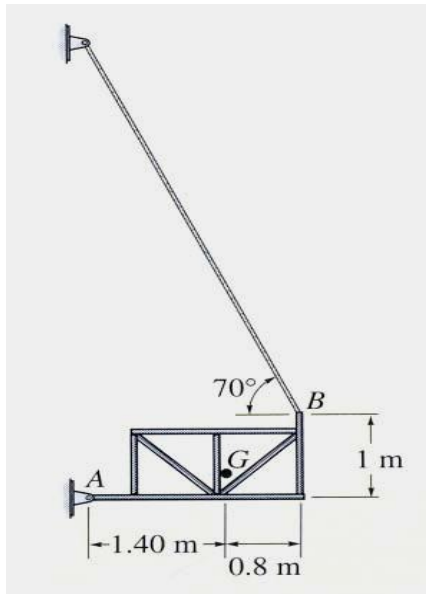
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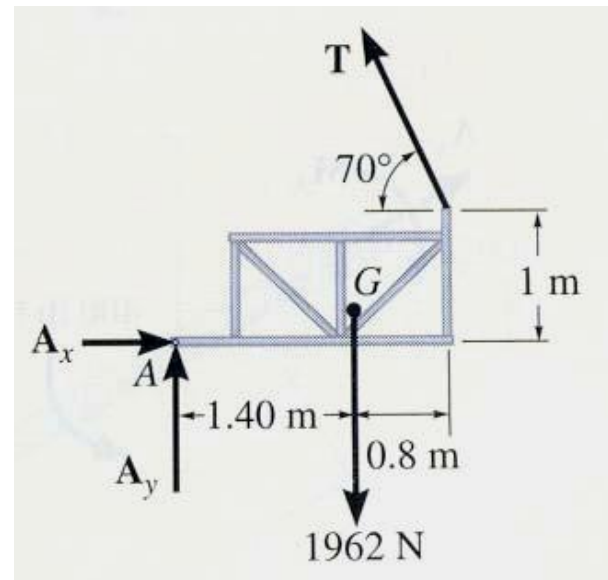
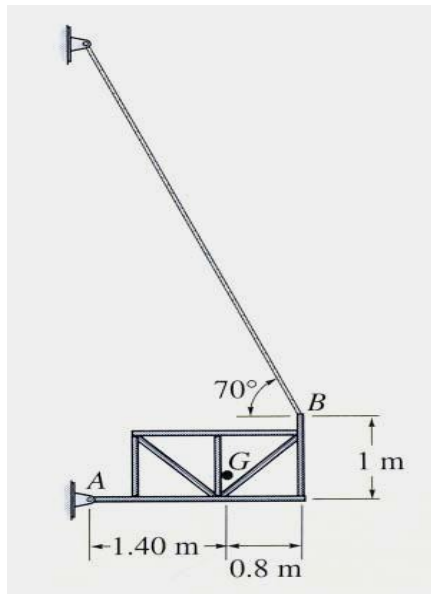
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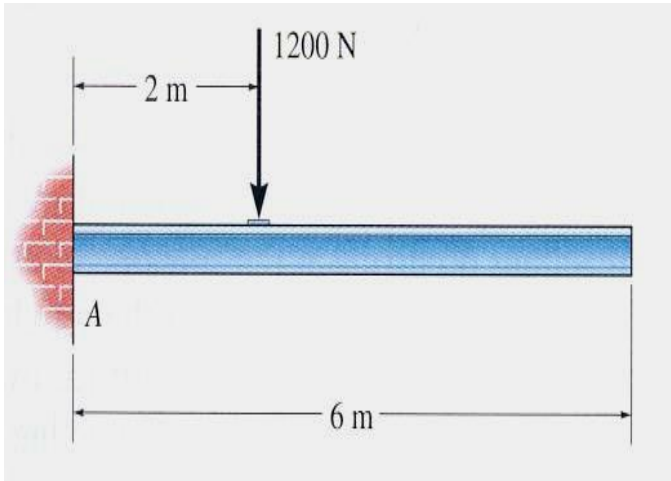
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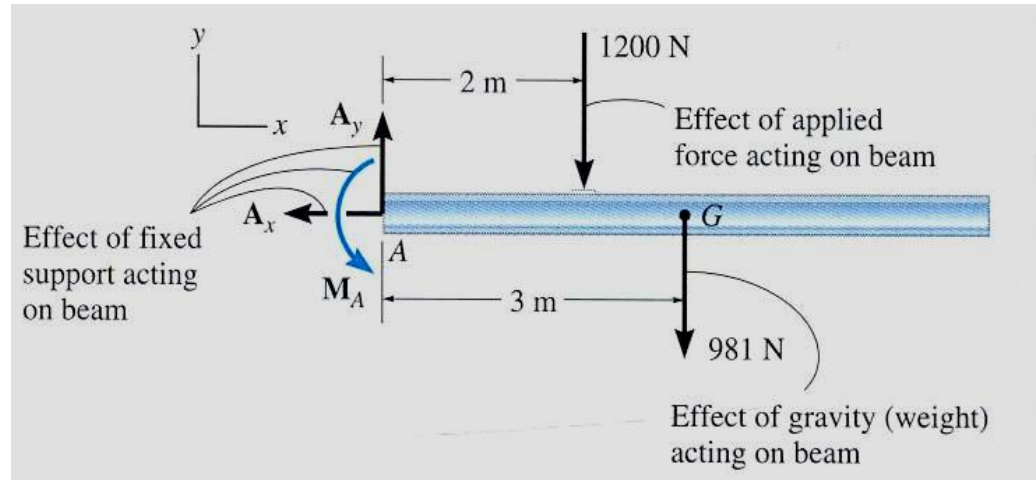
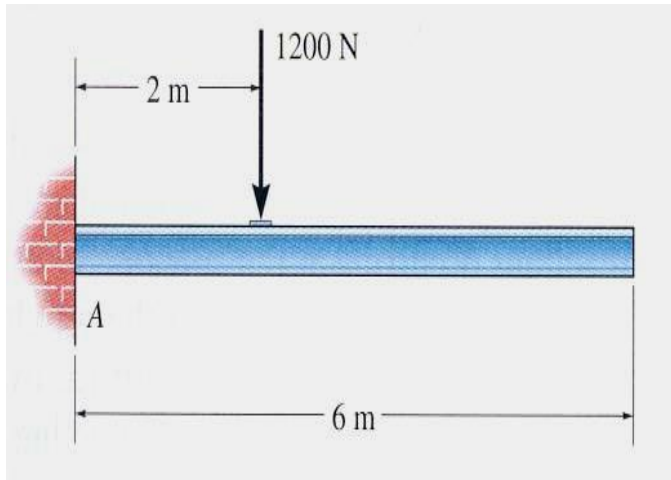
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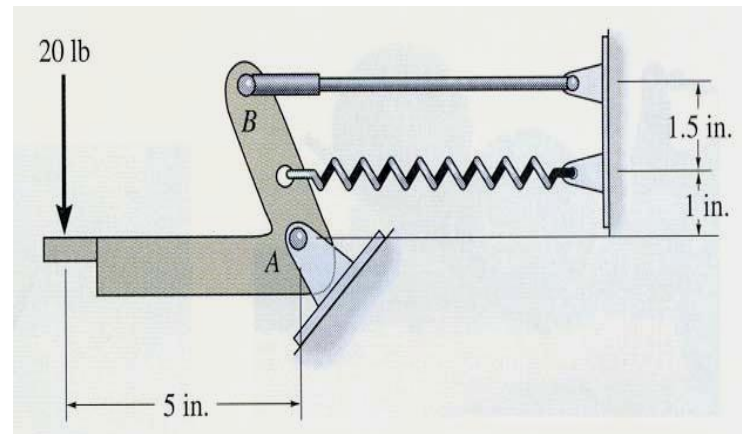
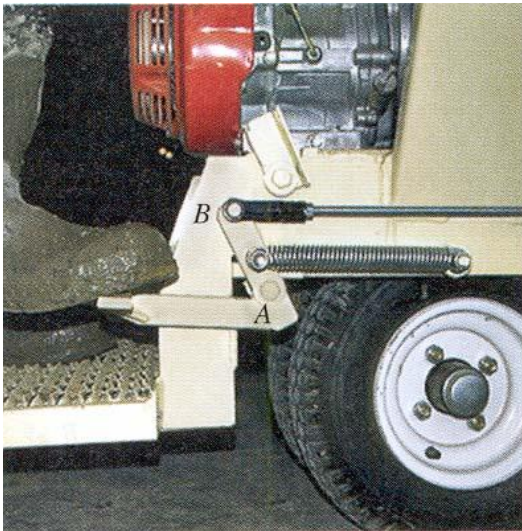
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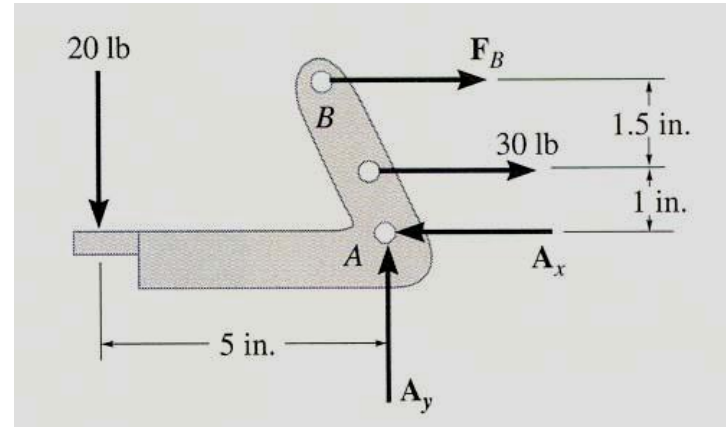
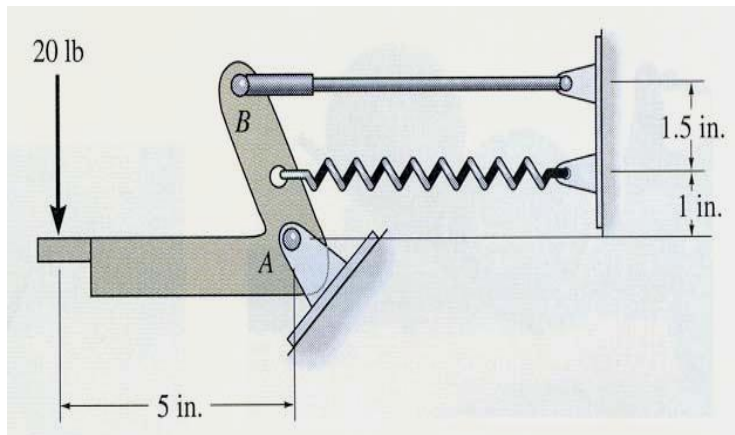
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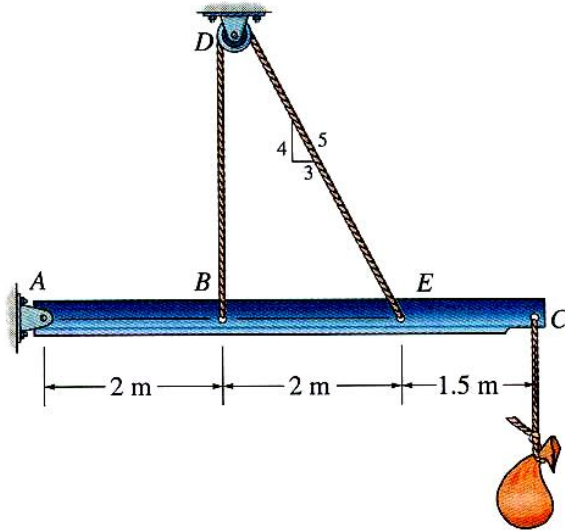
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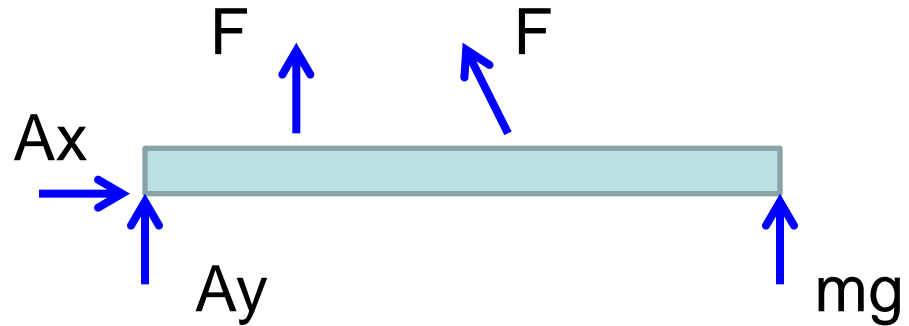
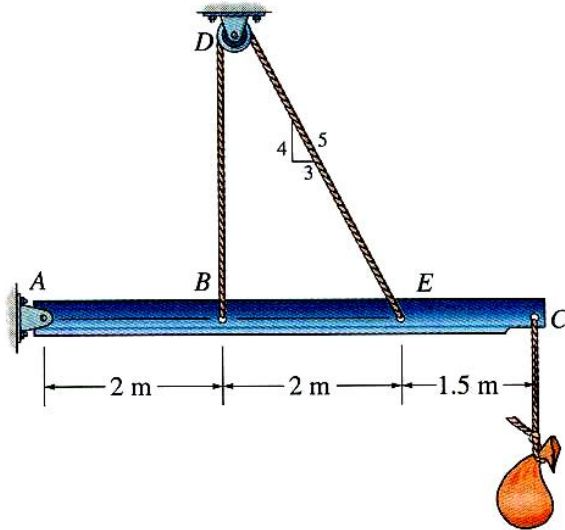
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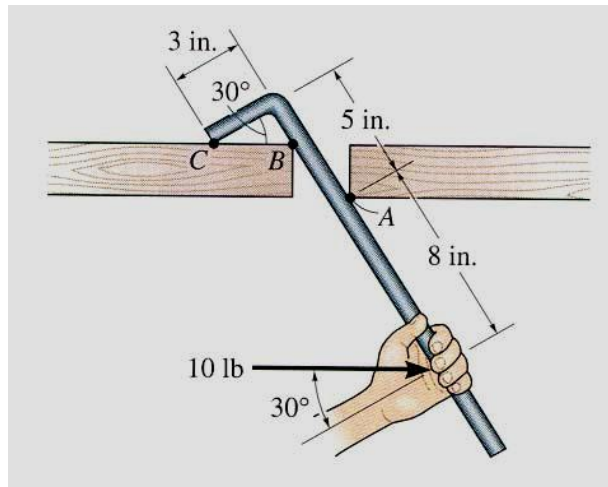
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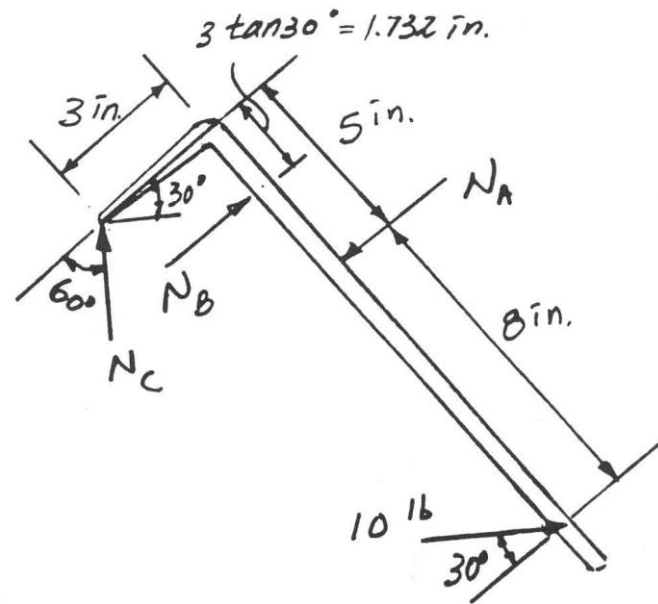
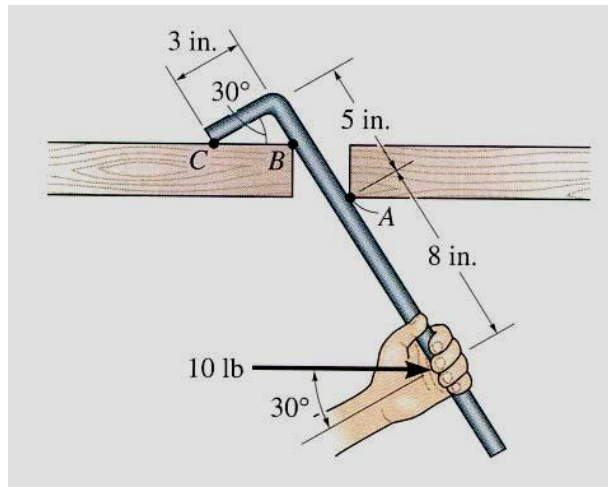
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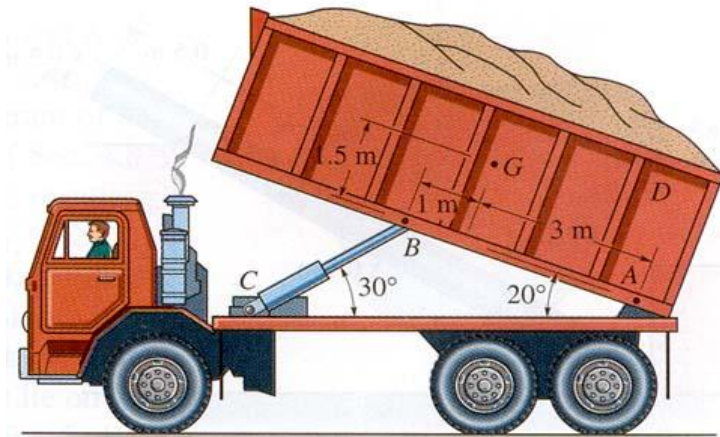
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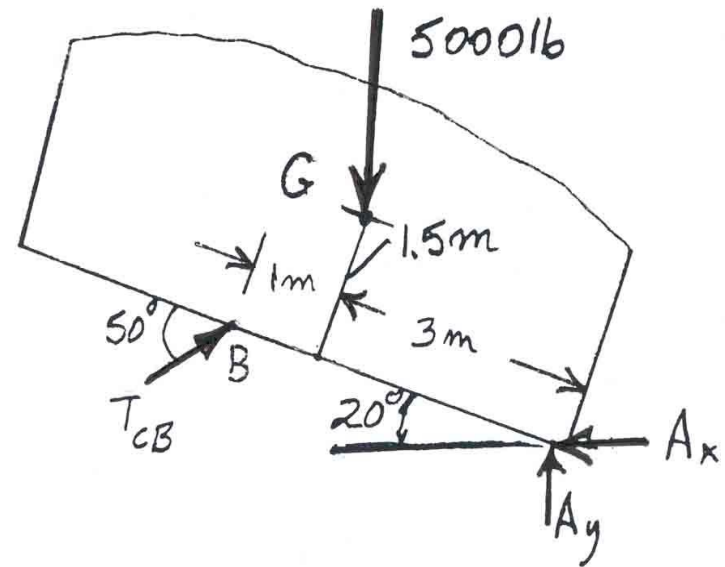
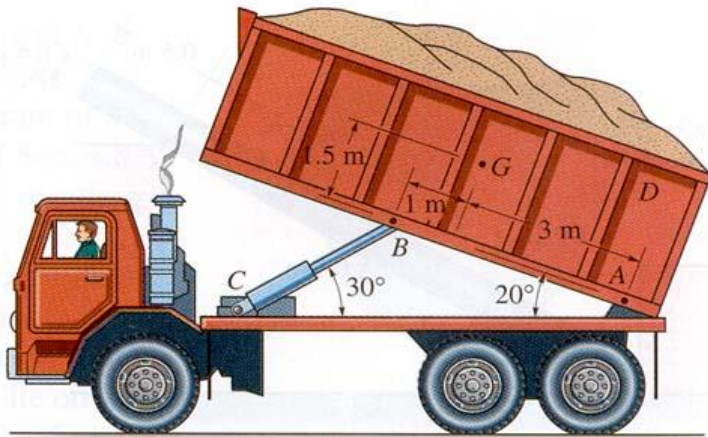
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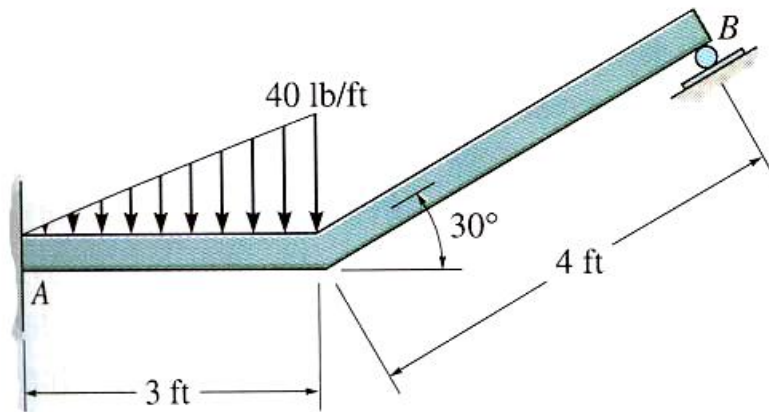
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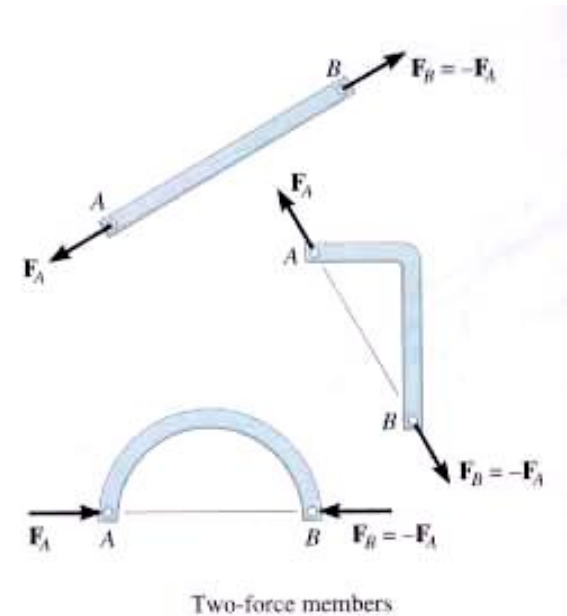
# Diagrama de Corpo Livre ...

- Vamos tentar desenhar o DCL desses exemplos:
- Dá pra resolver esse problema??



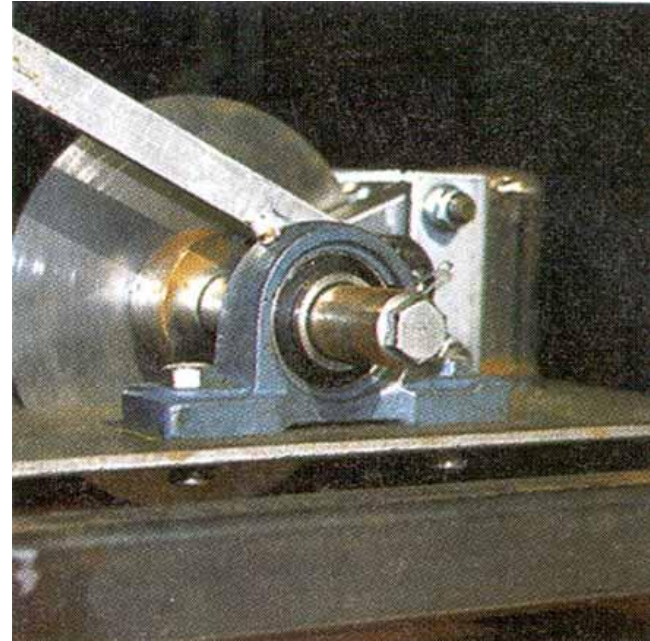
# Diagrama de Corpo Livre ...

- Elementos com DUAS FORÇAS



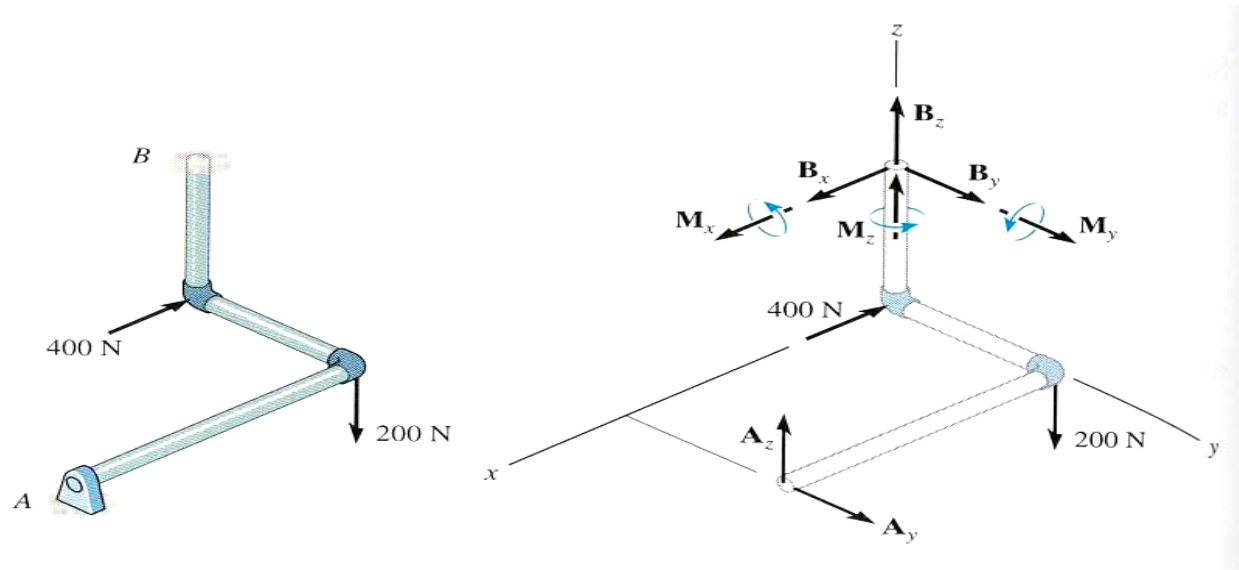


Junta Esférica



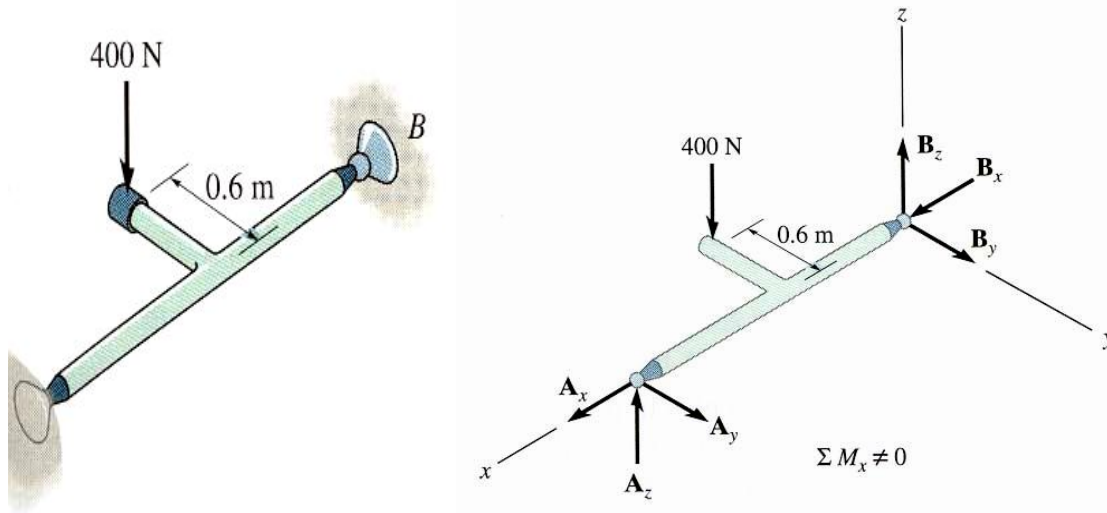
Mancal



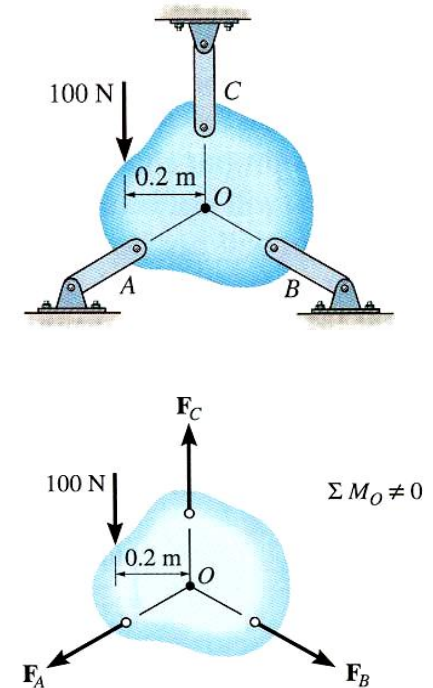


Restrições redundantes

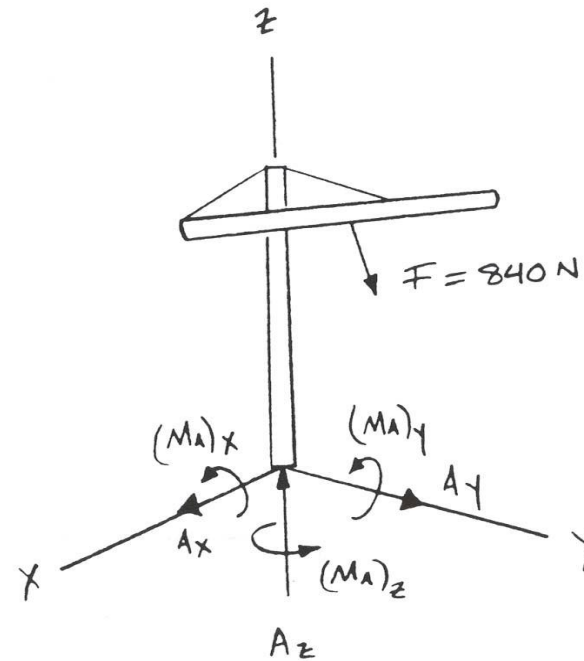
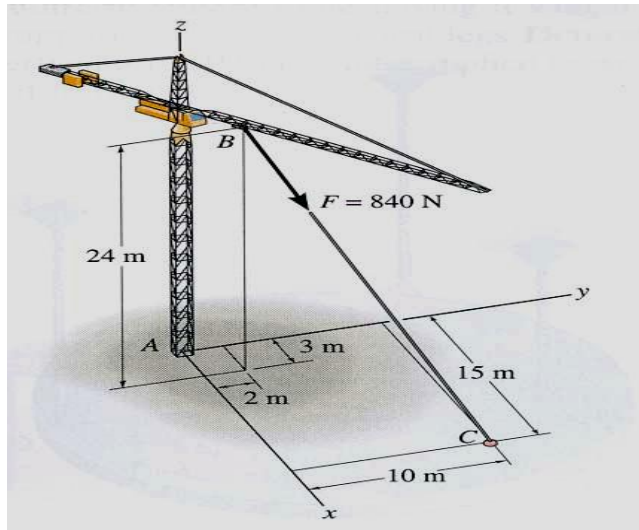




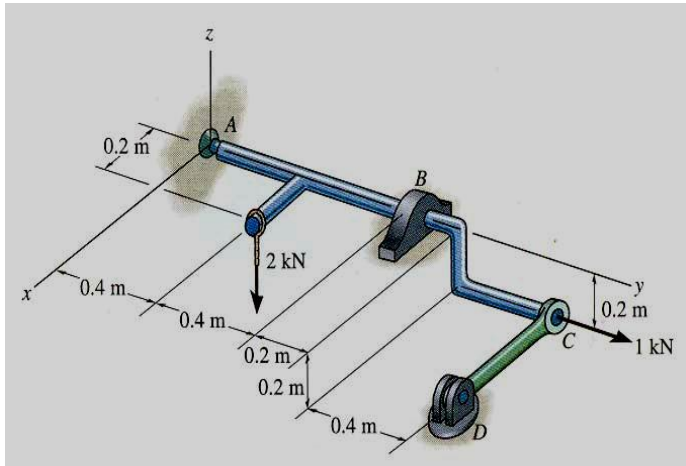
Restrições impróprias



# 3D - DCL



# 3D - DCL



A FBD of the rod:

