

Lucrare grafică și de calcul Nr.2

Partea 2

Principiul deplasărilor virtuale

Condiția generală:

Mecanismul prezentat în desen este amplasat în plan orizontal și se află în stare de echilibru. Asupra mecanismului acționează momente ale cuplurilor de forțe externe (M) și/sau forțe concentrate (Q). Considerați pentru rezolvare următoarele date numerice:

$$M_1 = 180 \text{ Nm},$$

$$M_2 = 160 \text{ Nm},$$

$$M = 200 \text{ Nm},$$

$$Q = 4 \text{ N},$$

$$l_1 = 0.4 \text{ m},$$

$$l_4 = 0.6 \text{ m},$$

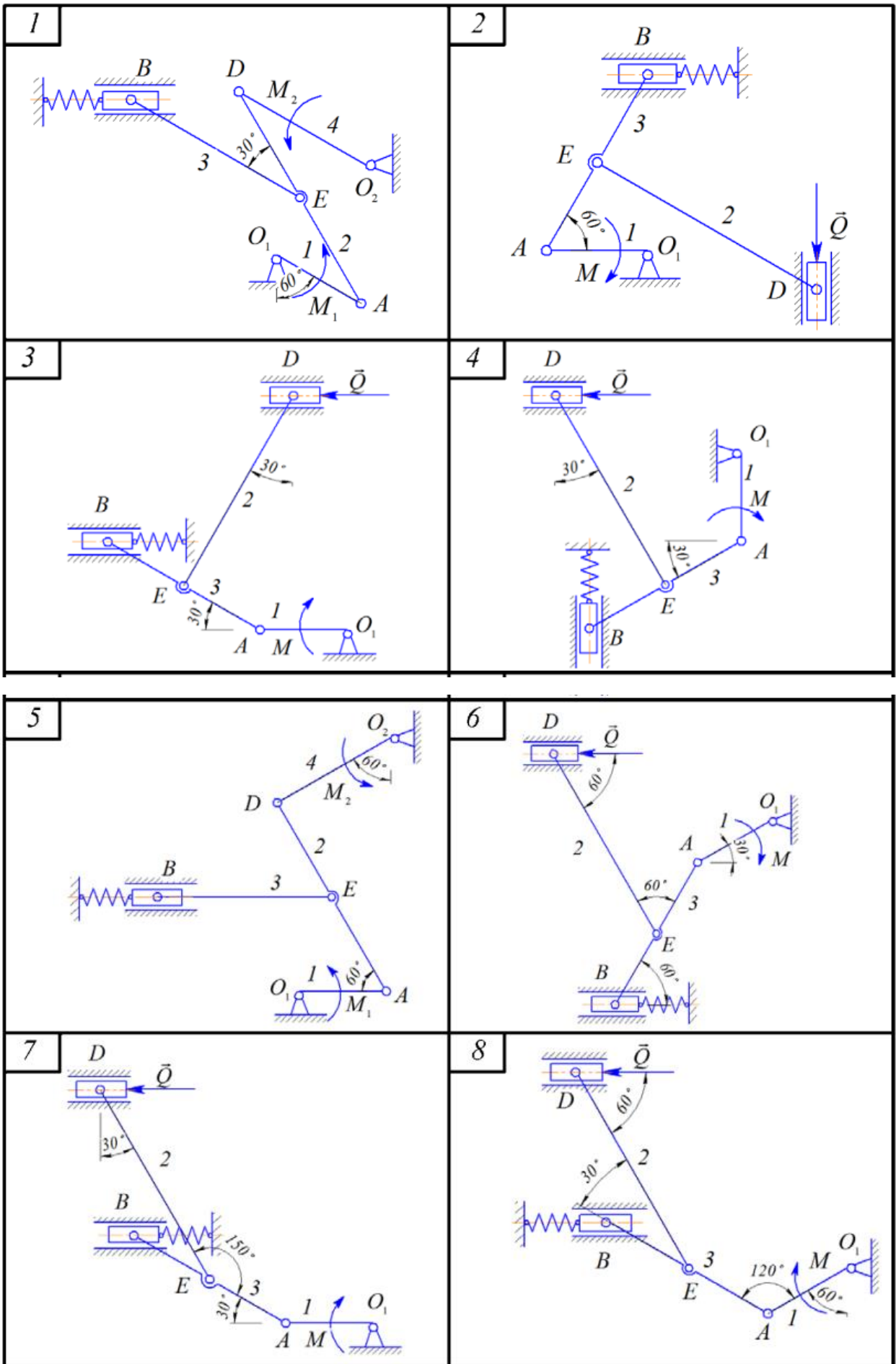
$$k = 200 \text{ N/m (constanta de elasticitate a resortului)}.$$

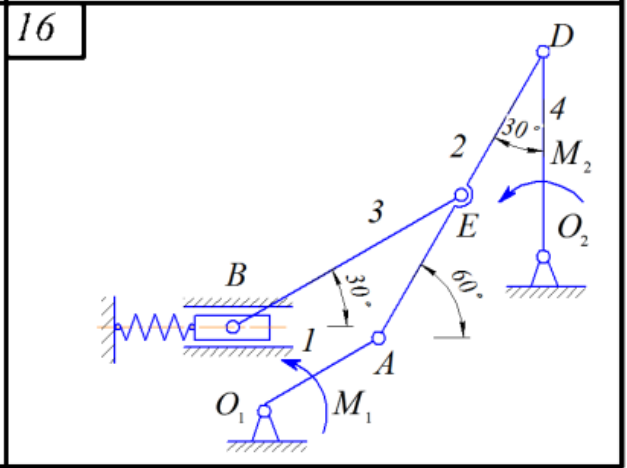
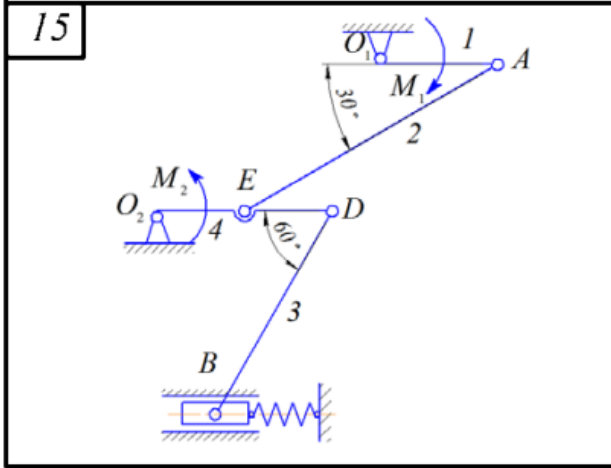
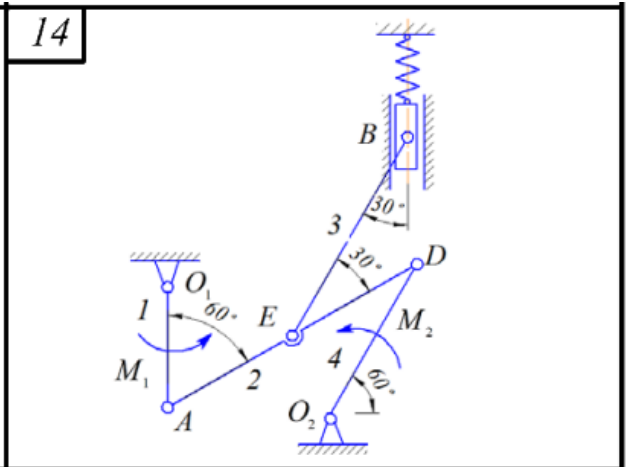
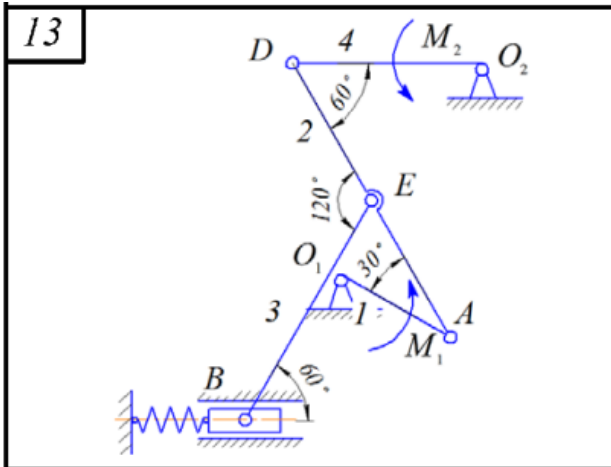
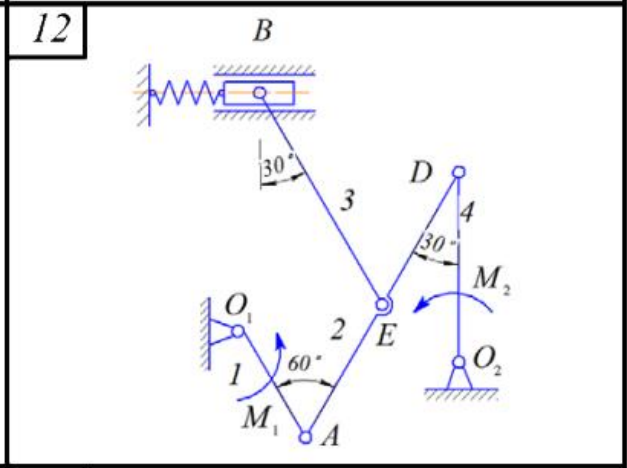
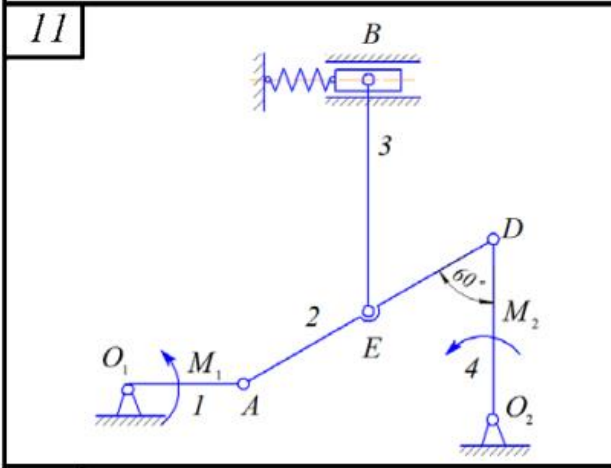
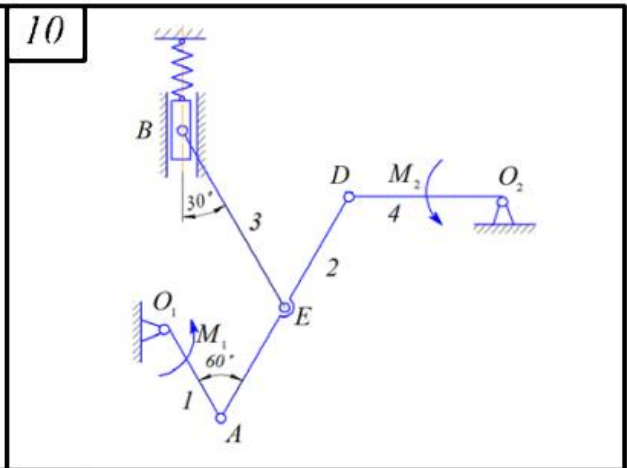
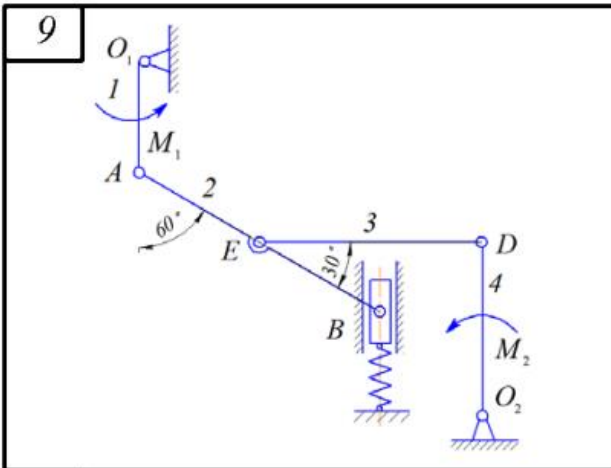
lungimile elementelor 2 și 3 se aleg de sinestătător.

Utilizând principiul deplasărilor virtuale determinați deformarea resortului.

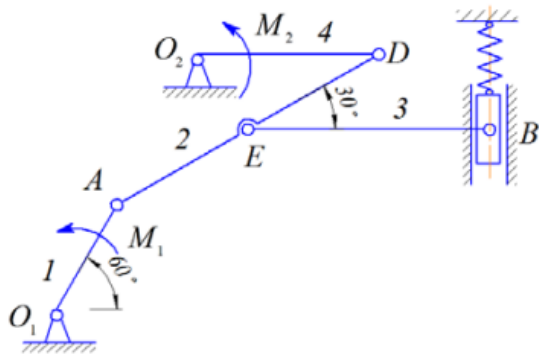
Δl - ?

Notă: Desenele schematice al mecanismelor sunt prezentate mai jos. Varianta se indică de către profesor. Studentul rezolvă problema în caiet și o prezintă în timpul laboratorului, în data indicată de către profesor.

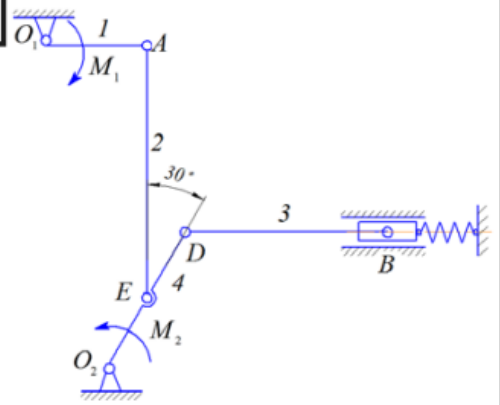




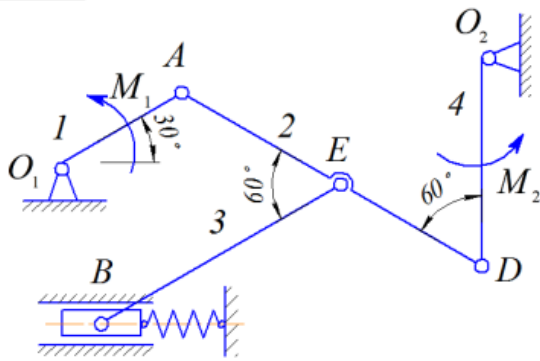
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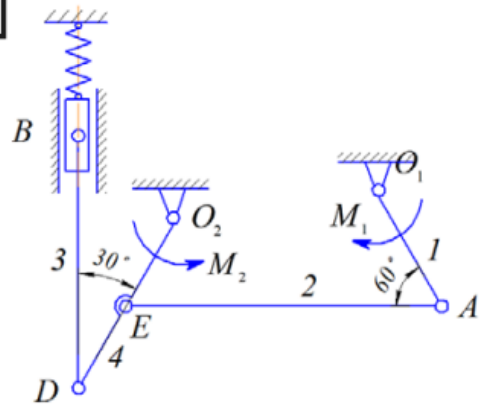
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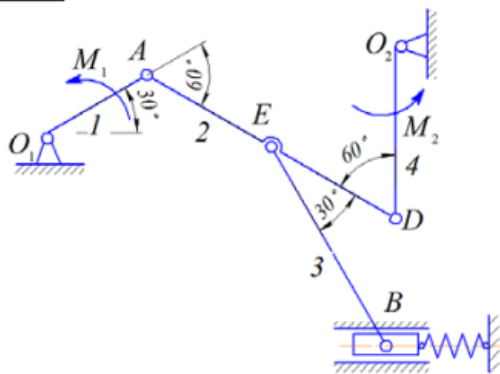
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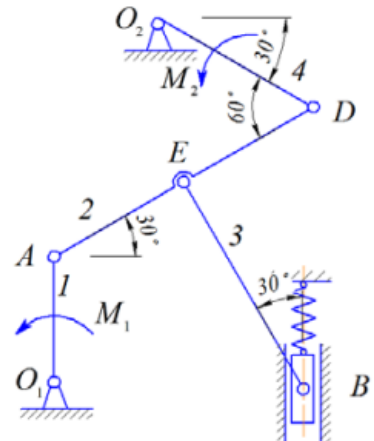
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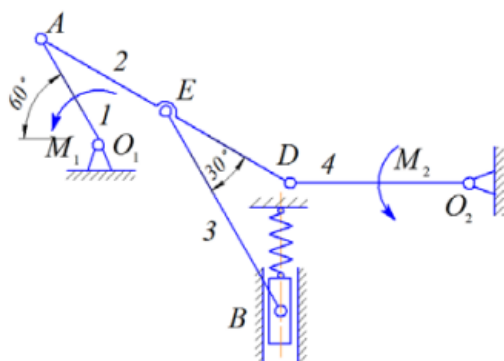
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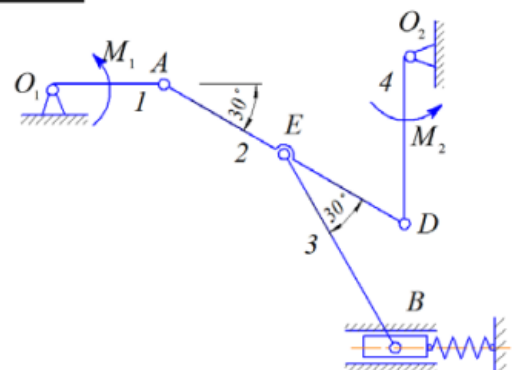
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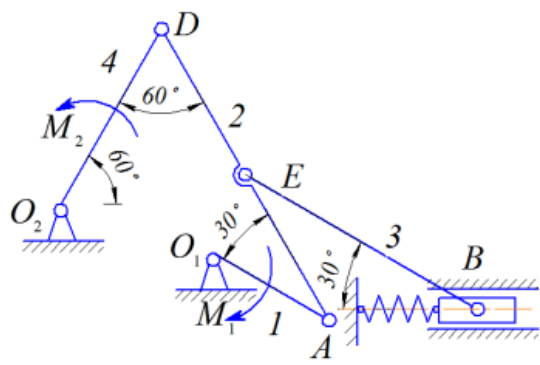
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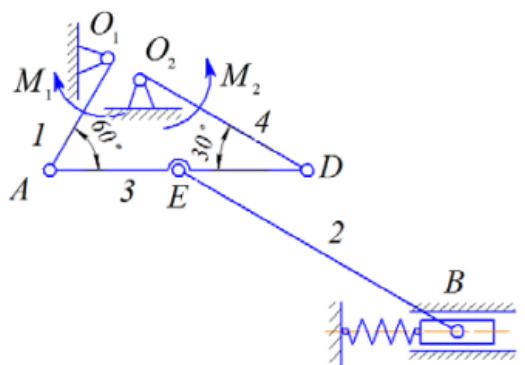
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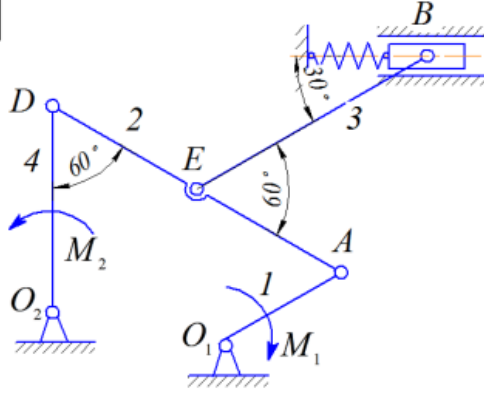
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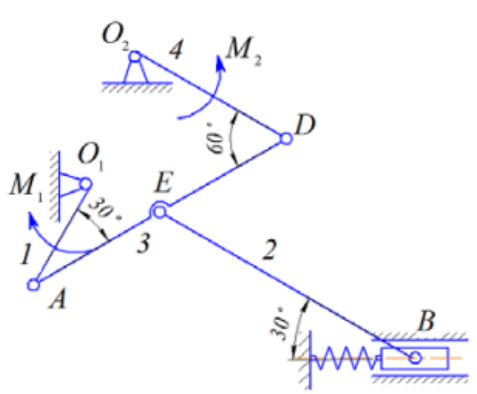
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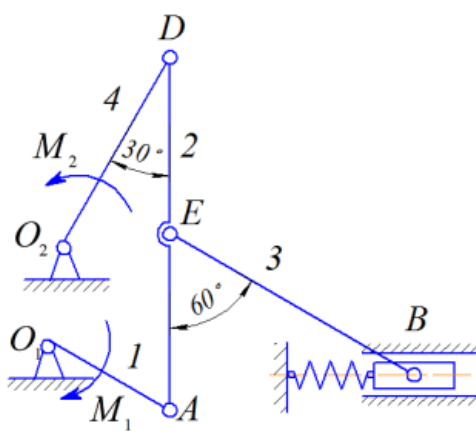
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