Course Code: ESC106A
Course Title: Construction Materials and Engineering Mechanics

Lecture No. 11:
Problems on Moment and Couple

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Lecture Intended Learning Outcomes

At the end of this lecture, student will be able to:

- Find the components of a force
- Deduce the moment and couple for a given force system
- Calculate the moments about given reference points in different structures

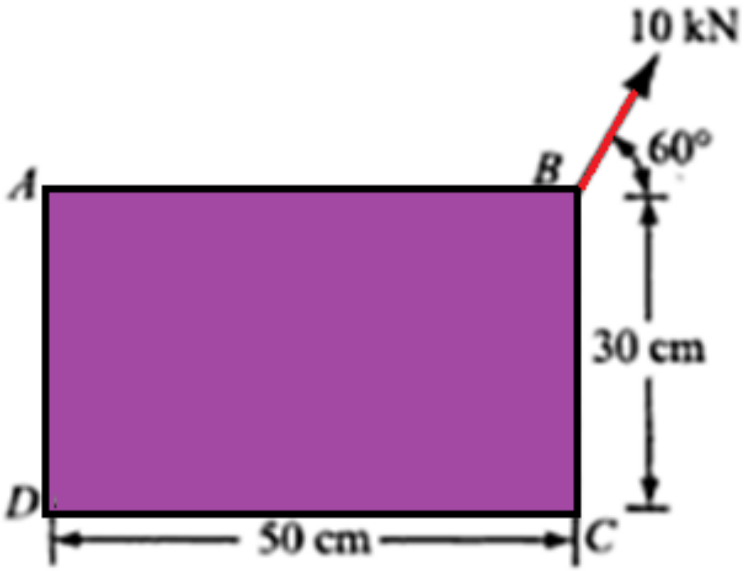
Contents

- **Engineering Mechanics**

  Numerical problems on moment of forces and couples

Problems on Moments

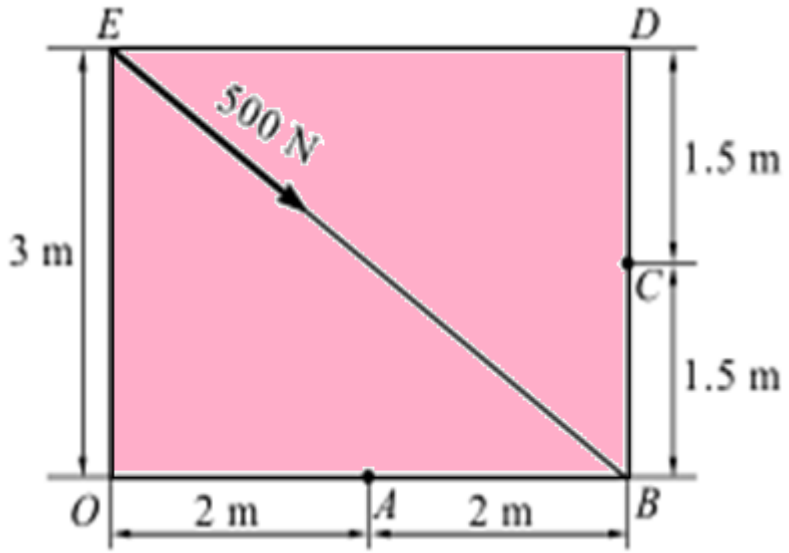
1.Find the moment of the forces about A and D



M_A=-4.33KNm

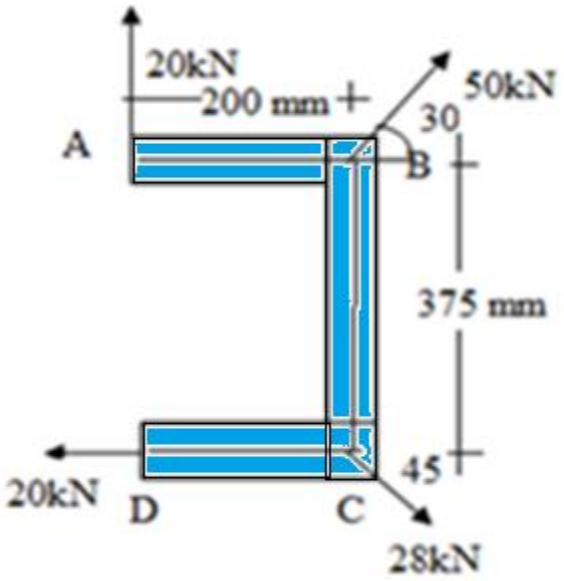
Problems on Moments

2.Find the moment of 500N force about points O,A,B and C as shown in the figure



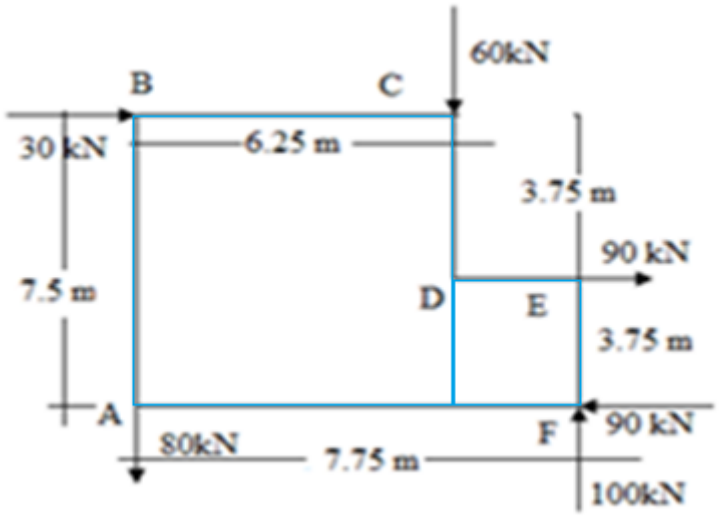
Problems on Moments

3.Find the moment of the forces about A



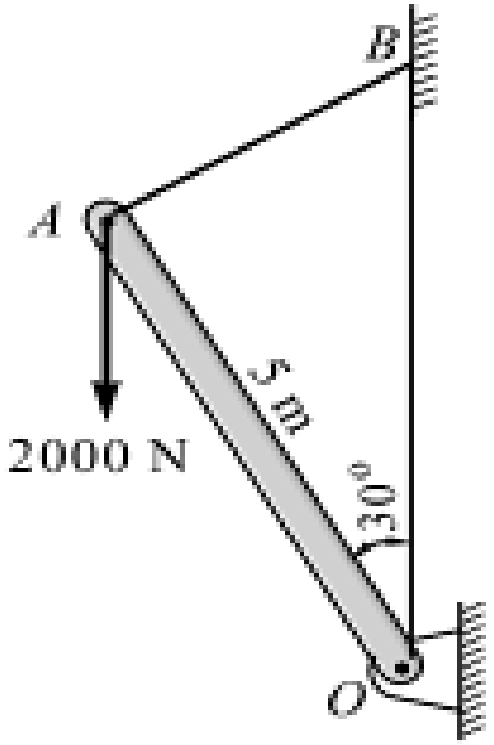
Problems on Moments

4.Find the moment of the forces about A



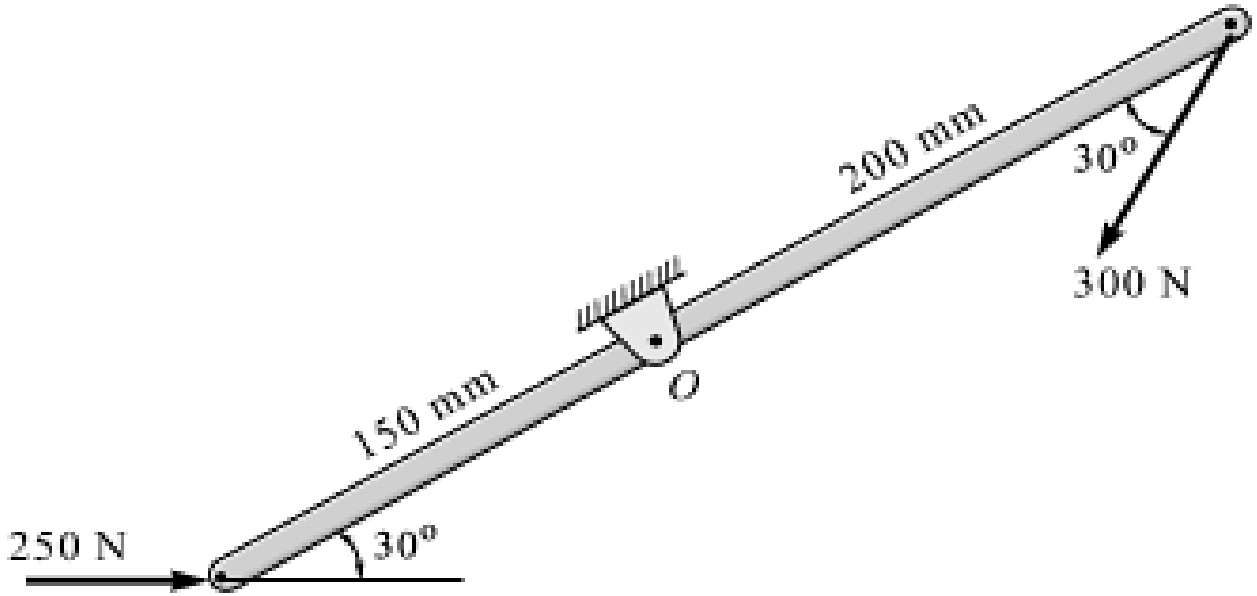
Problems on Moments

5.Find the moment of the force 2000N about point O



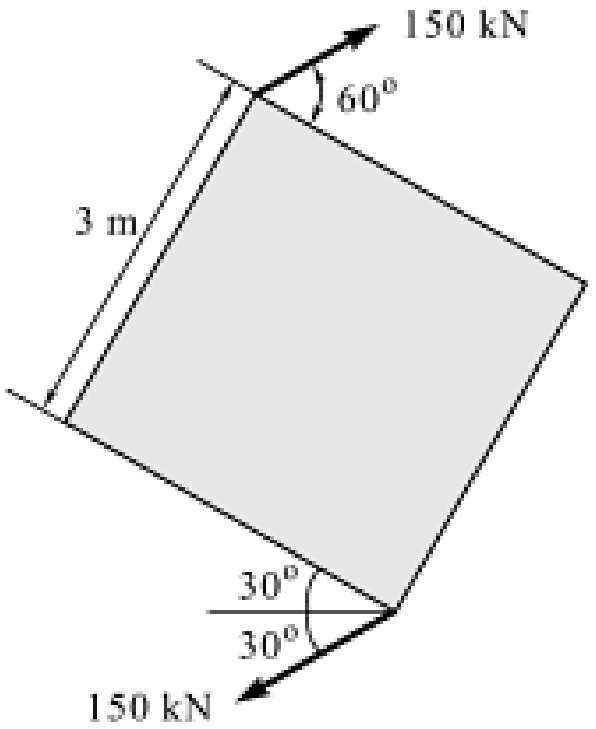
Problems on Moments

6.Find the moment of forces shown in the figure about the lever



Problems on Moments

7.A square plate is subjected to forces as shown in the figure. Determine the moment of the Couple



Summary

- Moment of a force is a measure of its tendency to cause a body to rotate about a specific point or axis
- Moment arm is the perpendicular distance from an axis to the line of action of a force
- A pair of equal unlike parallel forces separated by a distance is known as a couple
- A couple produces rotation or moment