

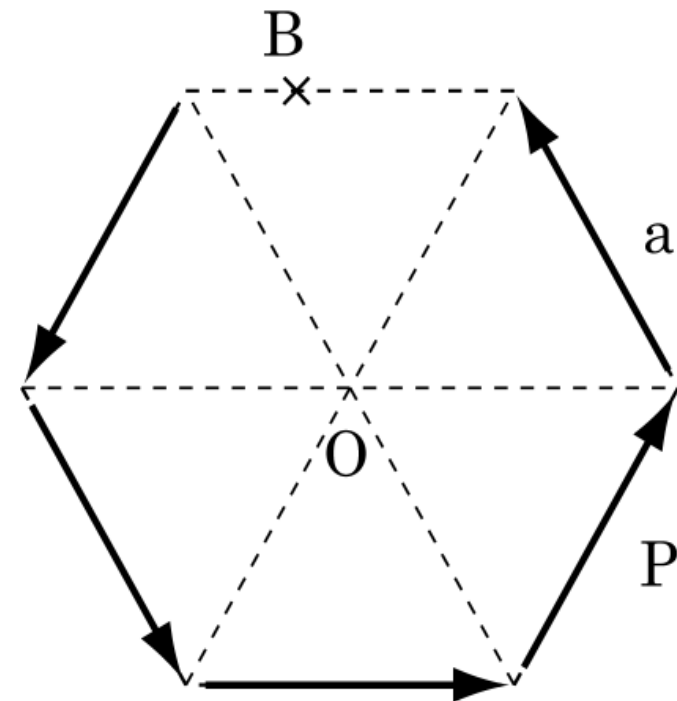
Engineers Mechanics- Equivalent Force-Couple System

Quiz Problem -1

Consider the forces of magnitude P acting on the sides of a regular hexagon with each side of length a . Find the equivalent force system of these forces at point B as shown in the figure.

Answers:

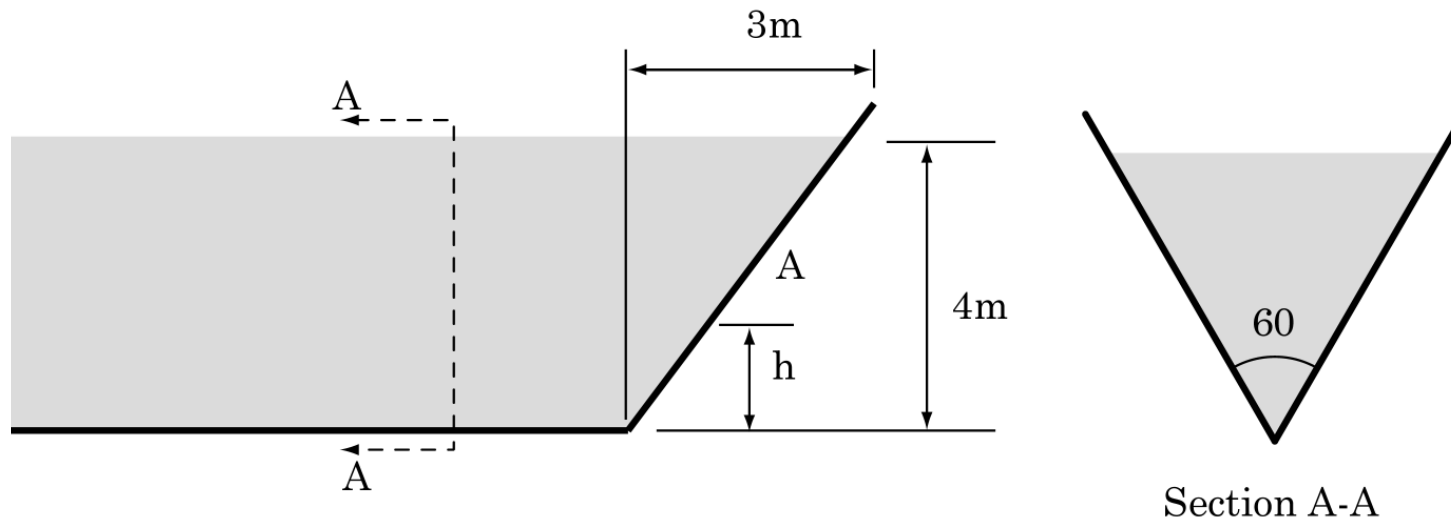
- (a) Force P (towards right),
Moment $\sqrt{3}/2 Pa$ (clockwise)
- (b) Force $4\sqrt{3} P$ (upward),
Moment $3\sqrt{3} Pa$ (anticlockwise)
- (c) Force P (towards right),
Moment $3\sqrt{3} Pa$ (anticlockwise)
- (d) Force P (towards left),
Moment $3\sqrt{3}/2 Pa$ (clockwise)



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Quiz Problem -2

The end of a fresh-water channel with a 60-deg V-section is closed by a slanted triangular plate A. Calculate the height h of the point on A through which the resultant R acts.



Answers:

(a) 2m (b) 2.5m (c) $4/3$ m (d) $2/3$ m