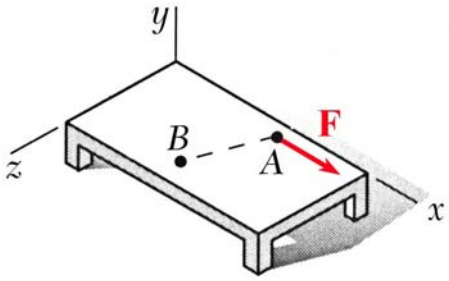
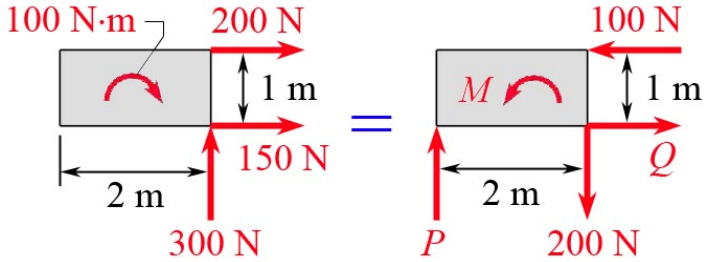
MEEG 2003 Quiz #5.m12.083

1. ④ A force **F** acts at point *A* of a rigid body as shown. Explain and illustrate with sketches that this force **F** may be moved to act at point *B* of the rigid body if a moment $\mathbf{M}_B = \overrightarrow{BA} \times \mathbf{F}$ is also added to act on this rigid body.

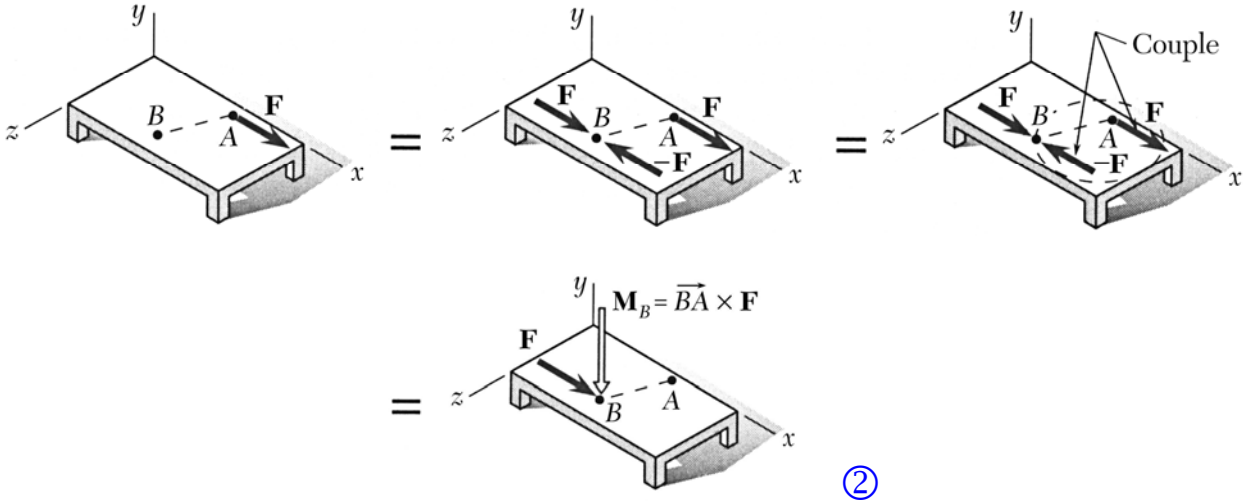


2. ⑥ Two equivalent force systems are shown. Determine the magnitudes *P*, *Q*, and *M* of the forces **P** and **Q** and the moment **M**.



---

1. Applying the *rigid-body principle* ① and the *moment of a couple*, ① we show that



②

2.

$P = 500$ N ② $Q = 450$ N ② $M = 600$ N·m ②