

You are encouraged to work in groups of two to four on this assignment and make a single group submission. Each problem is worth 5 points. For full credit indicate clearly how you reached your answer. All work must be legible and submitted on clean paper without ragged edges.

1. Call a region between circles (centered at the origin) of radius a and radius b but above the x -axis a hemiwasher. For what values of a and b will the center of mass of a hemiwasher fall within the region of the hemiwasher itself?
2. Suppose that instead of a full hemiwasher with radii 1 and 2, we take the region within a sector of a circle subtended by an angle of θ radians. For which values of θ will the center of mass fall within the region of the hemiwasher itself?
3. Do #22 in §15.6.
4. Do #24 in §15.6.