

ENT301 Chapter 9 Homework Problems

9-45 A slender rod 0.6 m long rotates about an axis perpendicular to its length and 0.14 m from its center of gravity. If the rod has a mass of 8 kg, determine its mass moment of inertia about this axis.

9-47 A flywheel can be considered as being composed of a thin disc and a rim. The rim weighs 322 lb and has diameters of 24 in and 30 in (inside dia and outside diameter). The disc weighs 64.4 lb. Determine the mass moment of inertia about the centroidal axis about which the flywheel rotates.

9-50 The shaft of a shredder has cutter blades welded to the shaft as shown in Figure P9-50. (Note: The drawing below just shows approximate orientation). The blades are 10 mm thick. The shaft and blades have a mass of 8000 kg/m³ (that should read they have a density of 8000 kg/m³). Determine the mass moment of inertia about the longitudinal centroidal axis.

Blade:

