2. (a) A wheel slows from 157 rev/minute to 118 rev/minute in a time of 43.0 s. Find its angular acceleration. \(-54.4 \text{ rev/min}^2\) or \(-1.51 \times 10^{-2} \text{ rev/s}^2\) or \(-9.50 \times 10^{-2} \text{ rad/s}^2\).

(b) A wheel starts at rest, with an angular acceleration of 2.50 rad/s². Through what angle has it turned at the end of 100 seconds?

\[ 1.25 \times 10^4 \text{ rad}, \text{ or } 7.16 \times 10^5 \text{ degrees}, \text{ or } 1.99 \times 10^3 \text{ rev}. \]

(c) Calculate the moment of inertia for the object shown for rotation about an axis through A, 0.50 m from the right end. 7.0 kg·m²

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<-----1.00 m-----X-----1.00 m----->
      2.00 kg   4.0 kg    A    6.00 kg
```

(d) Calculate the moment of inertia of a sphere of mass \(m\) and radius \(R\), for rotation about an axis \(R/2\) from the center of the sphere.

\[ \frac{13}{20} mR^2 \]

(e) The angular speed of a bicycle wheel is 25 rad/sec. If the radius of the wheel is 0.50 m, find the velocity of a point on the rim.

12 m/s, tangential to the rim.