96. (a) One particle is on the axis, so $r = 0$ for it. For each of the others, the distance from the axis is $r = (0.60\text{ m})\sin 60^\circ = 0.52$ m. Therefore, the rotational inertia is $I = \sum m_i r_i^2 = 0.27\text{ kg}\cdot\text{m}^2$.

(b) The two particles that are nearest the axis are each a distance of $r = 0.30$ m from it. The particle "opposite" from that side is a distance $r = (0.60\text{ m})\sin 60^\circ = 0.52$ m from the axis. Thus, the rotational inertia is $I = \sum m_i r_i^2 = 0.22\text{ kg}\cdot\text{m}^2$.

(c) The distance from the axis for each of the particles is $r = \frac{1}{2}(0.60\text{ m})\sin 60^\circ$. Now, $I = 3(0.50\text{ kg})(0.26\text{ m})^2 = 0.10\,\text{kg}\cdot\text{m}^2$.