1. $I = m \times r^2$

$= 4.5\,Kg \cdot (0.6)^2$

$= \boxed{1.62\,Kg \cdot m^2}$

$I = m \times r^2$

$= 4.2\,Kg \cdot (0.5)^2$

$= \boxed{1.05\,Kg \cdot m^2}$

BAT A would be harder to swing

2. $I = m \times r^2$

$= 1 \times (3r)^2$

$= \boxed{9r^2}$

$I = m \times r^2$

$= 1 \times r^2$

$= \boxed{r^2}$

∴ First bat would be 9x has hard to swing

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1. $T = m \times r^2 \times \alpha$

$= 2.1\,Kg \times (0.8)^2 \times 25$

$= \boxed{33.6\,N}$

2. $T = m \times r^2 \times \alpha$

$1842 = 65 \times r^2 \times 35$

$\frac{1842}{2275} = \frac{2275 r^2}{2275}$

$0.8 = r^2$

$\boxed{0.9 = r}$

3. $H = m \times r^2 \times \omega$

a) $= 80 \times (.35)^2 \times 80$

$= \boxed{784\,Kg \cdot m^2\,°/s}$

b) ↓ radius ∴ open arms

c) $784 = m \times r^2 \times \omega$

$784 = 80\,(.7)^2 \times \omega$

$\frac{784}{39.2} = \frac{39.2\omega}{39.2}$ faster in a)

$\boxed{20\,°/s = \omega}$

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4. a) $H = m \times r^2 \times \omega$

$= 65 \times (0.8)^2 \times 90$

$= \boxed{3744\,Kg \cdot m^2\,°/s}$

b) $3744 = 65 \times (0.4)^2 \times \omega$

$\frac{3744}{10.4} = \frac{10.4\omega}{10.4}$

$\boxed{360°/s = \omega}$

5. $H_1 = H_2$

$m \times r^2 \times \omega = m \times r^2 \times \omega$

$m \times r^2 \times 360 = m \times (3r)^2 \times \omega$

$\frac{360 r^2}{9r^2} = \frac{9r^2 \omega}{9r^2}$

$\boxed{40°/s = \omega}$