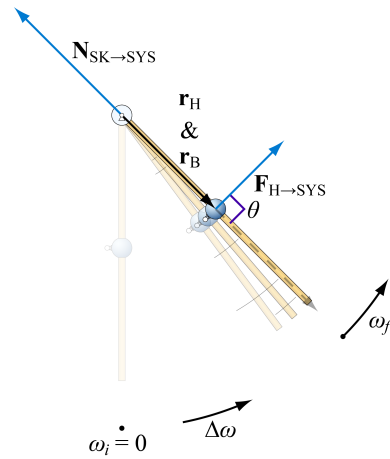
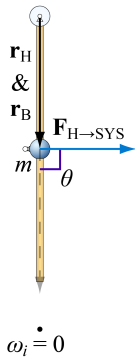
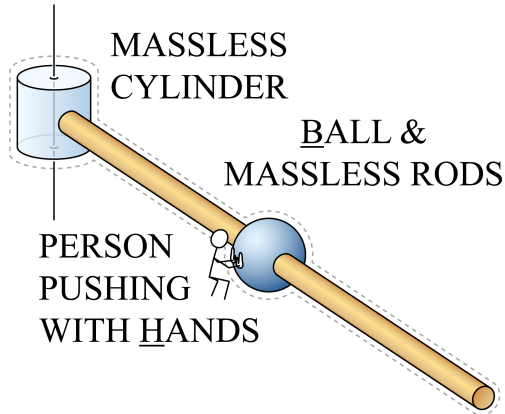


Torque and rotational inertia

What affects the amount of angular acceleration I give a rigid object?

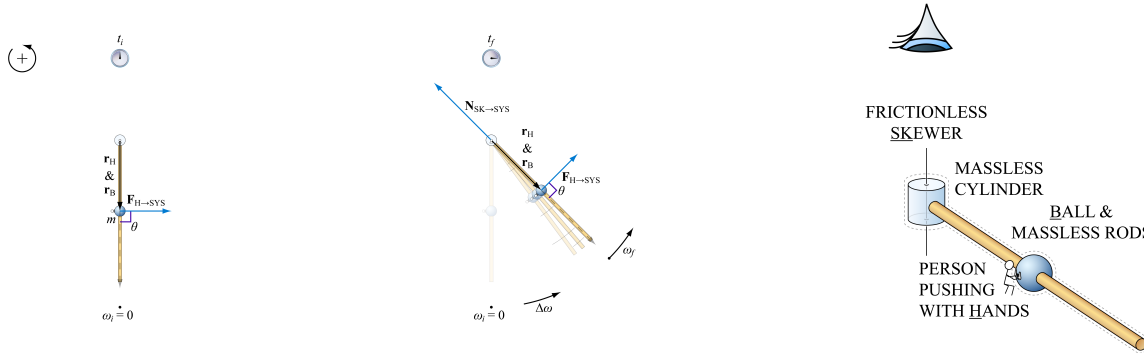


FRICTIONLESS
SKEWER



Torque and rotational inertia

What affects the amount of angular acceleration I give a rigid object?

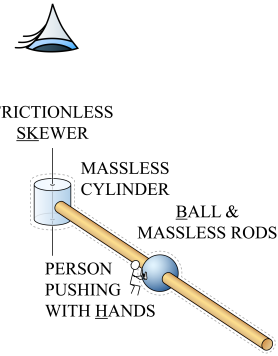
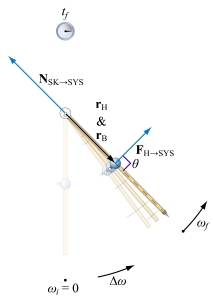
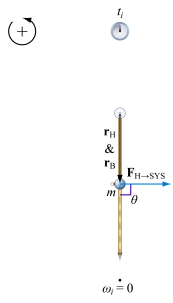


What can I do to give a rigid object a greater angular acceleration?

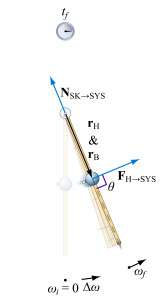
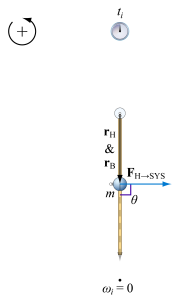
<p>$\uparrow r \Rightarrow \uparrow \alpha$</p>	<p>$\uparrow r \Rightarrow \uparrow \alpha$</p>
<p>$\uparrow F \Rightarrow \uparrow \alpha$</p>	<p>$\uparrow F \Rightarrow \uparrow \alpha$</p>
<p>$\downarrow \perp \text{ ity} \Rightarrow \downarrow \alpha$</p>	<p>$\downarrow \perp \text{ ity} \Rightarrow \downarrow \alpha$</p>
<p>$\tau_F := \pm r_{\perp} F$ $:= \pm (r \sin \theta) F$</p>	<p>$\tau_F := \pm r_{\perp} F$ $:= \pm (r \sin \theta) F$</p>

Torque and rotational inertia

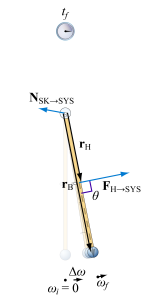
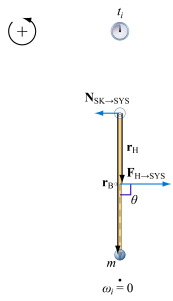
What affects the amount of angular acceleration I give a rigid object?



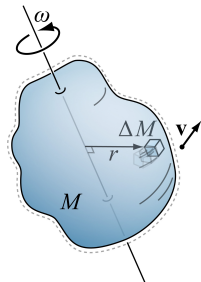
How can I change the properties of a rigid object to make the object more difficult to angularly accelerate?



$$\uparrow M \Rightarrow \downarrow \alpha$$



$$\uparrow r \Rightarrow \downarrow \alpha$$

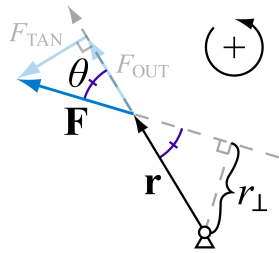
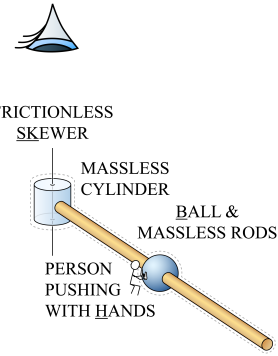
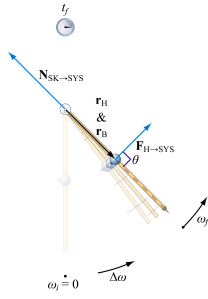
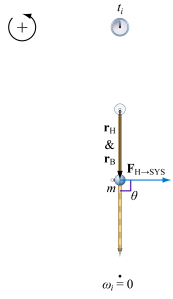


$$I_{\text{RIGID SET OF PARTICLES}} := \sum_i \Delta M_i r_i^2$$

$$I_{\text{RIGID}} = I_1 + I_2 + \dots$$

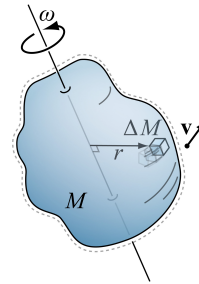
Torque and rotational inertia

What affects the amount of angular acceleration I give a rigid object?



$$\tau_F := \pm r_{\perp} F$$

$$:= \pm (r \sin \theta) F$$



$$I_{\text{RIGID SET OF PARTICLES}} := \sum_i \Delta M_i r_i^2$$

$$I_{\text{RIGID}} = I_1 + I_2 + \dots$$

$$\alpha = \frac{\sum \tau}{I}$$