

1 | A review of what happened before

$$PE = mg\Delta h \quad (1)$$

$$KE = \frac{1}{2}mv^2 \quad (2)$$

But, really, the definition of kinetic energy is a bit of a lie. Because really, its actually the following thing:

$$KE_{total} = KE_{translational} + KE_{rotational} \quad (3)$$

Where, $KE_{rotational} = \frac{1}{2}MV^2$ we already know.

But, rotational around the CM