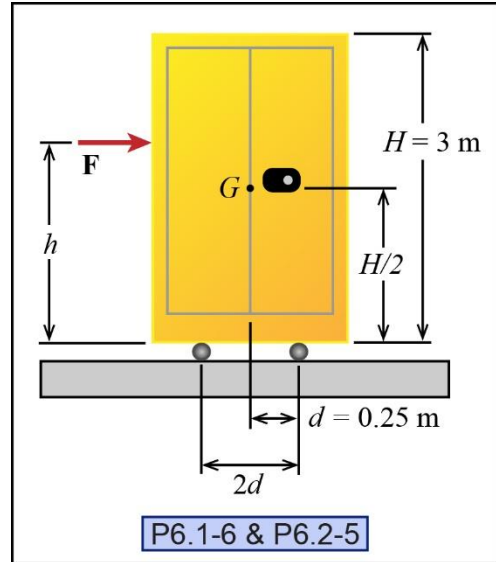**P6.7-4)** Determine the angular acceleration of the cabinet shown in the figure and the linear acceleration of its center of mass. The mass of the cabinet is 100 kg and the magnitude of F is 500 N which is applied at a height of $h = 2.5$ m. Neglect friction and the size of the wheels. The cabinet's radius of gyration about its mass center is 0.9 m.
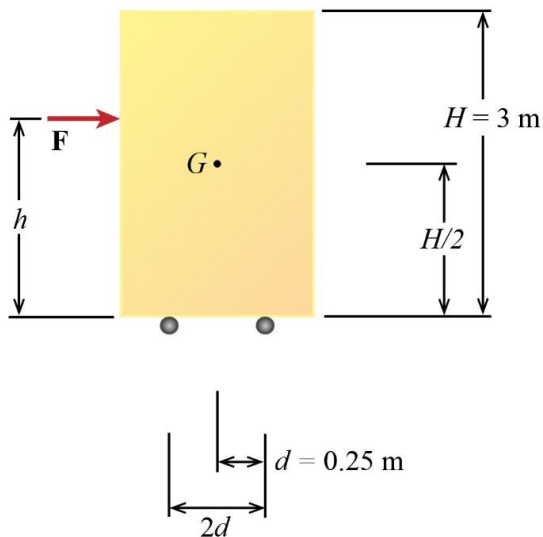
Given:

Find:

P6.1-6 & P6.2-5

Solution:

Draw a free-body diagram of the cabinet.

Calculate the mass moment of inertia.

What reference point will be used?

$I =$ _____

Use the equation of motion of the cabinet to determine the accelerations.

$a_G =$ _____

$\alpha =$ _____