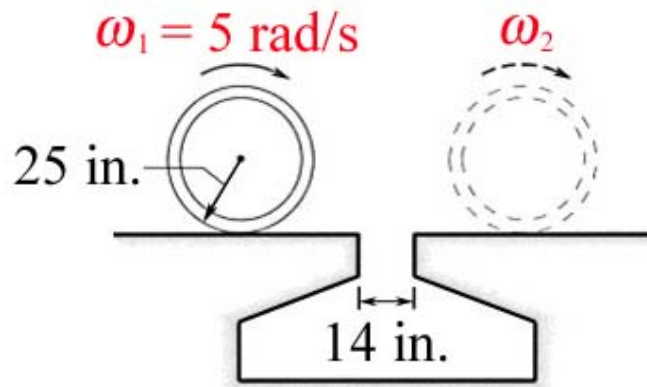


MEEG 2013 Quiz #8

A section of pipe weighs 64.4 lb and rolls without slipping with $\omega_1 = 5 \text{ rad/s}$ before falling into the 14-in. gap (a pot hole) as shown. Assuming impact at the gap to be perfectly plastic, determine the angular velocity ω_2 of the pipe after having climbed up the gap to roll on the other side.



- *Just before impact:*

$$\omega' = 5.061446 \text{ rad/s} \curvearrowright \textcircled{3}$$

- *Just after impact:*

$$\omega'' = 4.664629 \text{ rad/s} \curvearrowright \textcircled{4}$$

- *After climbing up the gap to roll on the right side:*

$$\omega_2 = 4.59788 \text{ rad/s} \curvearrowright$$

$$\omega_2 = 4.60 \text{ rad/s} \curvearrowright \textcircled{3}$$