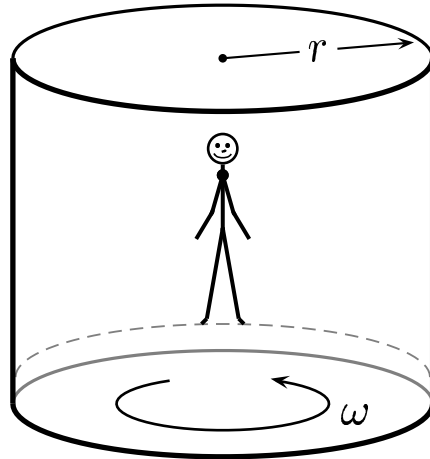


A “Barrel of Fun” consists of a large vertical cylinder that spins about its axis fast enough that any person inside will be held against the wall.

Assume: The angular speed ω_1 , due to a certain upward frictional force f_1 , holds a person against the wall without slipping.



What is the friction force f_2 , if the angular speed is doubled; *i.e.*, $\omega_2 = 2\omega_1$.

- A) $f_2 = 4 f_1$.
- B) $f_2 = 2 f_1$.
- C) $f_2 = f_1$.
- D) $f_2 = \frac{1}{2} f_1$.

For the person to be held up against the wall, the net vertical force on the person is zero.

So $f_1 = m g$ and also $f_2 = f_1 = m g$.

Answer **C**.