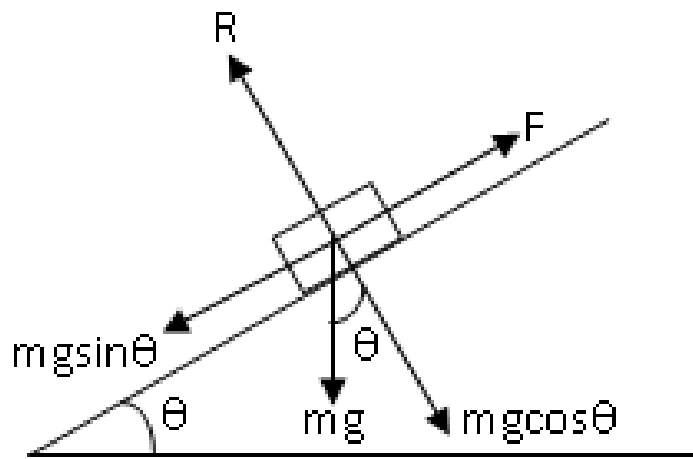


Answer on Question #44913 – Physics - Mechanics | Kinematics | Dynamics

A body is placed on an inclined plane and has to be pushed down. what is the angle made by the normal with the vertical?

- a) equal to angle of repose
- b) equal to the angle of friction
- c) less than the angle of repose
- d) more than the angle of repose

Solution:



Angle of repose (angle of repose is equal to angle of friction) is defined as the minimum angle made by an inclined plane with the horizontal such that an object placed on the inclined surface **just begins to slide**.

If body has to be pushed down, angle made by the normal with the vertical is less than the angle of repose, because friction force is bigger than projection of the force \vec{mg} on the inclined plane. Thus, we need additional pushing force to move body down the plane.

Answer: c) less than the angle of repose