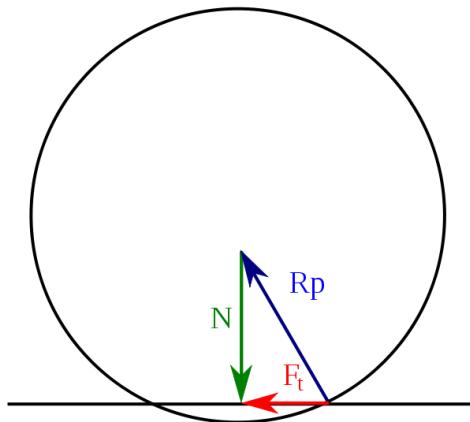


Answer on Question #45770, Physics, Mechanics | Kinematics | Dynamics

What will be the direction of frictional force, separately in the cases of Pure rolling, forward slipping and backward slipping? Please can you explain this with some diagrams ?

Look at this from your life experience.

Some cylindrical object rolling clockwise and ride to the right with it.



F_t is the friction force

R_p is the reaction of the support force

N is the pressing force,

in simple option is the force of gravity

If there is no some force that will contract in clockwise direction, object will slip.

So in normal way friction force will act as shown on picture.

To define friction force direction in such situation you have to transform this moving into the linear, and use the rule that friction force contracts to the moving.

So on Pure rolling and forward slipping we have clockwise rotation (in this case we have friction like at the picture) and opposite direction in other option.