

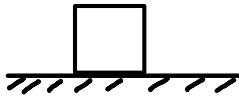
Free Body Diagrams

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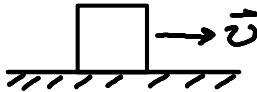
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Draw a proper free body diagram for each of the following problems. Make sure that you a) isolate the bodies; b) each of your force arrows starts at the point where the force is applied; c) have a proper coordinate axis; d) uniquely label each unique force.

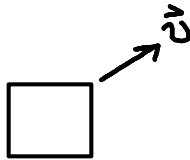
1. A stationary block on a frictionless surface



2. A block moving at constant speed on a frictionless surface

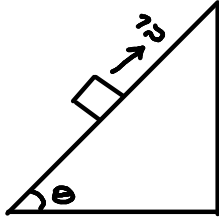


3. A block moving through air (neglecting air friction)



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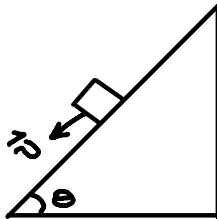
4. A block sliding along a frictionless incline plane.



5. A ball dropped through the air with air resistance.



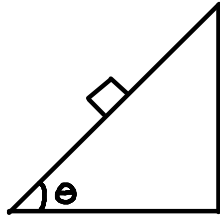
6. A block sliding down an incline plane with friction.



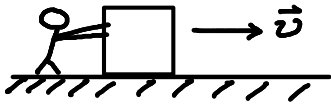
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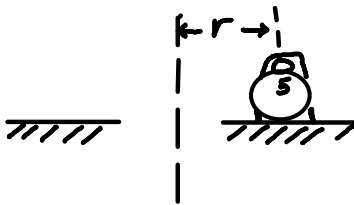
7. A stationary block on an incline plane with friction.



8. Johnny pushing a block across a level floor at constant velocity.

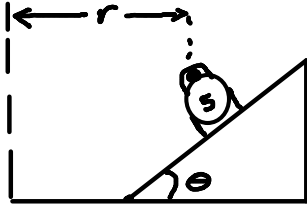


9. A car going around a circular track at constant speed.

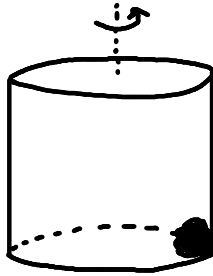


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10. A car going around a banked track at constant speed with friction.



11. Clothes in a washing machine at the outside of the drum.

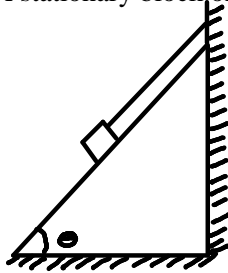


12. Spaceship in outer space traveling at constant velocity on its way to the moon.

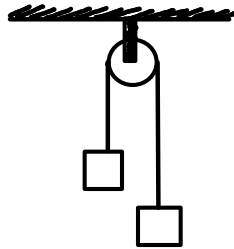


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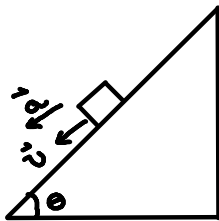
13. A stationary block on an incline plane with friction and attached by a string.



14. Two blocks attached by a physics string over a massless pulley (Draw FBD for both blocks)

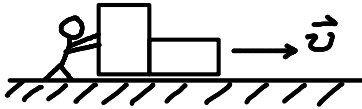


15. A block accelerating as it moves down an incline plane with velocity v .

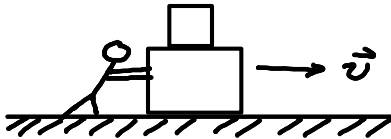


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16. Johnny pushes two blocks across a floor with friction to the right at increasing speed.



17. Two stacked blocks are pushed across a frictionless floor to the right at constant speed. There is friction between the blocks.



18. The moon going around the Earth at constant speed.

