

Chapter 4: Motion and Friction

PRINT Name _____ Period _____

1. State Newton's First Law and give two examples.
2. Explain why we don't get to the back of the bus by jumping up.
3. What was shown in the Video *Galileo's Horse* Experiment?
4. Explain what causes the Centrifugal Effect.
5. Using a diagram, and a Law of Motion, show why a released satellite takes off Tangentially.
6. Explain the Coriolis Effect.
7. State Newton's Law of Acceleration.
8. Define the Newton of Force.
9. Showing "The Method", find the acceleration of a 5.00 kg mass when acted upon by 20.0 newtons of force. Ans: 4.00 m/s².
10. Explain the difference between Mass and Weight.
11. Showing "The Method", find the weight of Joe who's mass is 62.0 Kg. Ans: 608 N.
12. Discuss why the Acceleration of Gravity, neglecting friction, is the same for all. Use both Galileo's and Newton's explanations.
13. State Newton's Third Law and Write the Equation for it defining the members. Give Two examples.
14. Using Newt's 3rd Law, Find how fast a 10kg projectile leaves its 200kg cannon when the cannon kicks back at 2.00m/s. Ans: 40m/s
15. State Newton's Law of Gravity and explain "If you have a Mass problem, eat less, if you have a Weight problem, go to the moon".
16. Explain what is wrong with, "What goes up must come down".
17. State Kepler's Three Laws of Planetary Motion and tell why they are important.
18. Define: Force Vector, Equilibrant Vector, Equilibrium, Normal Force, Friction.
19. With arrow heads, draw a vector diagram labeling Two Forces, their Resultant, and Equilibrant.
20. With arrow heads, Resolve a Force into North and West Components.
21. Explain what is Terminal Velocity.
22. Find the force needed to pull a 500.0 N bar across a floor where the coefficient of friction is 0.40.0. Ans: 200N.
23. Diagram a Mass on a Slope. Draw and Label the Weight vector, the Normal vector, and the Slide Down vector. Make a parallelogram and write the Formula for the Coefficient of Friction of your diagram.