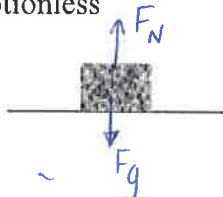


**Academic Physics**  
**Force Diagrams**

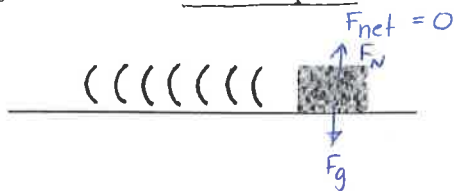
Name KEY  
Date \_\_\_\_\_

In each of the following situations, represent the object with a particle. Sketch all the forces acting upon the object. For now, just draw the arrows to indicate the forces. Later, we will draw the arrows to the correct length to represent the magnitude of the force acting upon the object.

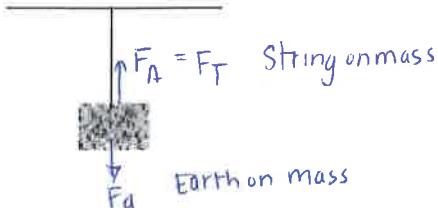
1. Object lies motionless



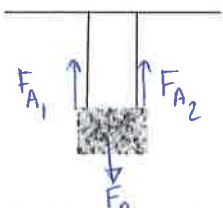
3. Object slides at constant speed without friction.



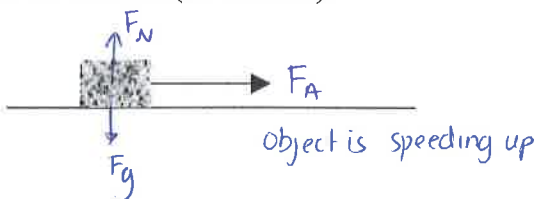
5. An object is suspended from the ceiling.



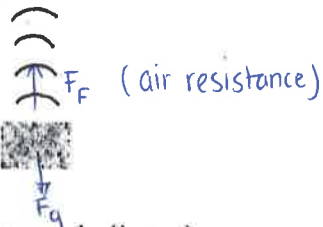
7. An object is suspended from the ceiling with two equal length strings.



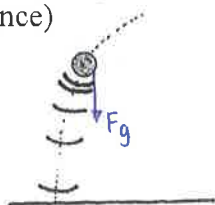
9. An object is pulled by an applied force parallel to the surface (no friction).



11. The object is falling at constant (terminal) velocity.



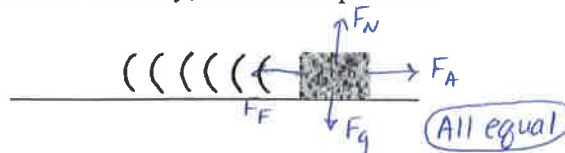
- ? 13. The ball is rising in a parabolic trajectory. (no air resistance)



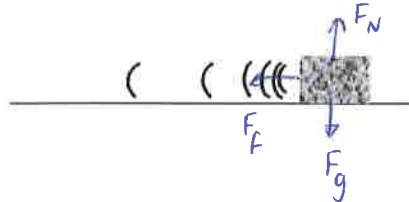
2. Object is in free-fall. Assume no air resistance.



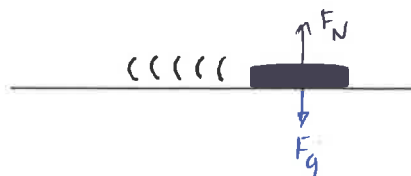
4. An object slides a horizontal surface at constant velocity; friction is present.



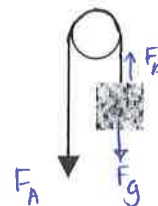
6. Object slows due to kinetic (moving) friction.



8. An ice hockey puck sliding across a frictionless surface at constant velocity.  $F_{net} = 0$



10. An object is suspended from a pulley system and pulled upward at a constant speed.



12. The ball is at the top of a parabolic trajectory. (no air resistance)

