

Name \_\_\_\_\_ Period \_\_\_\_\_

## FBD Quiz 1

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**1. Which best describes a free body diagram?**

- a) A diagram of an object that is free of all forces
- b) A diagram of an object and all of the forces acting upon it
- c) A diagram of an object and all forces it is acting upon
- d) A diagram of all forces acting upon an inclined plane

**2. Jeff is pulling a box towards the right using a rope.**



**a) Draw in and label the forces.**

**b) If the box is moving at a constant velocity, write two equations that are true about the forces on this box.**

3. Draw the free body diagram for a box sliding down an inclined plane

4. Cinderella is sitting in her carriage as her horses pull it. The ropes that are tied to the carriage form a  $26^\circ$  angle with the horizontal. Sketch a free body diagram for the carriage and label all forces.

5. Draw all forces acting on the small mass *at the bottom* of the pulley. Assume the system is at rest.

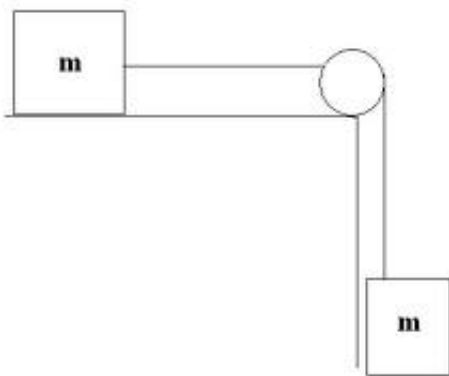


Image Source: <http://media.photobucket.com/image/recent/arbivoldy/pulley.jpg>

**6. Draw a free body diagram for a car skidding to a stop.**

**7. Draw the free body diagram of you standing on a scale in an elevator that is moving uniformly upwards.**

8. Draw all forces acting on masses  $m$  and  $M$ . Assume  $M > m$  and that the masses are equidistant from the ground.

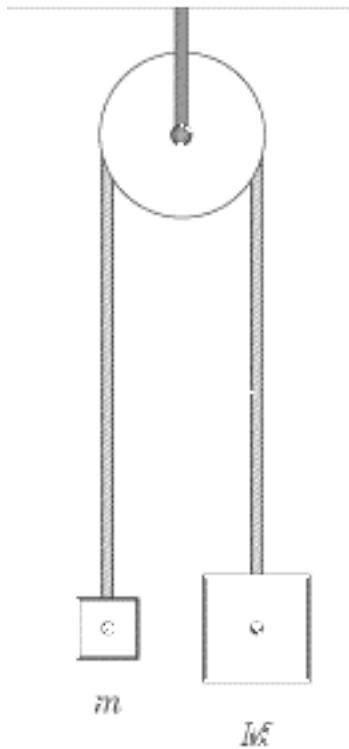


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