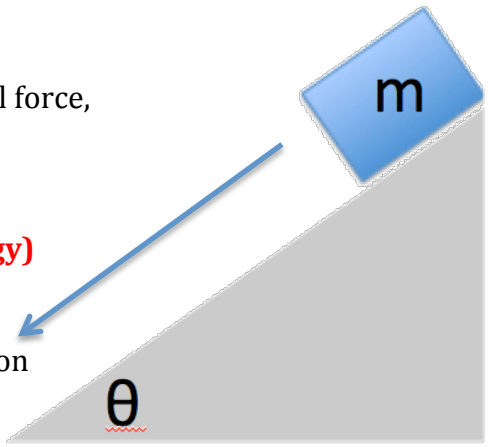
Engineering Physics I – Fall 2015
Quiz 6 – October 22, 2015
Name:

1. True or False If the only force present is the gravitational force, kinetic energy will be conserved



If the only force present is the gravitational force, the total mechanical energy (sum of kinetic and potential energy) will be conserved.

2. True or False The work done on an object only depends on the net force applied to the object.

The work done on an object depends on a specific force, which can be the net force or another specific force, like the friction force or gravitational force.

3. True or False The work-energy theorem only applies to conservative forces.

The work-energy theorem applies to all forces, including friction (as we discussed in class), and friction is not a conservative force.

4. What forces do work on a block as it slides down an inclined plane (see figure)?

Gravitational force **Friction force (if present)** Normal force

For a block sliding down an inclined plane, both the gravitational force and the friction force will do work. The gravitational force has a component along the block's motion down the ramp (magnitude mg sin θ).

5. What forces do work on a block as it slides across a horizontal table?

Gravitational force **Friction force (if present)** Normal force

Only the friction force, if it is present, will do work because the normal force and gravitational force would be perpendicular to the block's motion.