

Phys171 - Mon 2/12

Today: Chapter 5

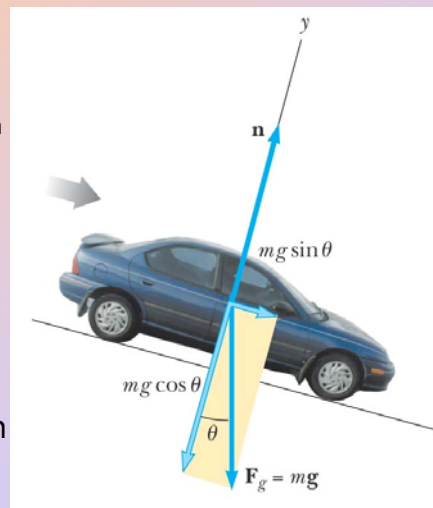
Tue: Chapter 6 start

Thu: short quiz on chapters 3,4 (instead of online quiz)

Note: Update to HW was posted on Fri night. Hw for chapters 3,4 will be due this week Fri. HW scheduled to take about 2 hours each week.

Object on inclined planes

- Forces acting on the object:
 - Normal force, n ,
Exerted by surface - perpendicular to the surface
Equal in magnitude, opposite in direction to force exerted by car on surface
 - Gravitational force, F_g :
Exerted by earth - toward earth center
 - Frictional force
- Choose the coordinate system with x along the incline and y perpendicular to the incline
- Replace the force of gravity with its components perpendicular and along the surface



An object is held in place by static friction on an inclined surface. The angle of inclination is increased until the object starts moving and now experiences dynamic friction. If the surface angle is no longer increased once the object starts moving, then the object

1. slows down.
2. moves at uniform speed.
3. speeds up.
4. none of the above

Fundamental Forces

- Gravitational force
 - Between two objects
- Electromagnetic forces
 - Between two charges
- Nuclear force
 - Between subatomic particles
- Weak forces
 - Arise in certain radioactive decay processes

Forces we deal with in this course

Other forces (including all contact forces)
are the result of fundamental forces

Examples:

Friction force: Caused by complicated sum of electromagnetic forces between many particles in the two surfaces that rub against each other.

Spring force: Result of electromagnetic forces between atoms in the spring

Force a wall exerts on a ball thrown against the wall:
Result of electromagnetic forces between atoms in the ball and wall