

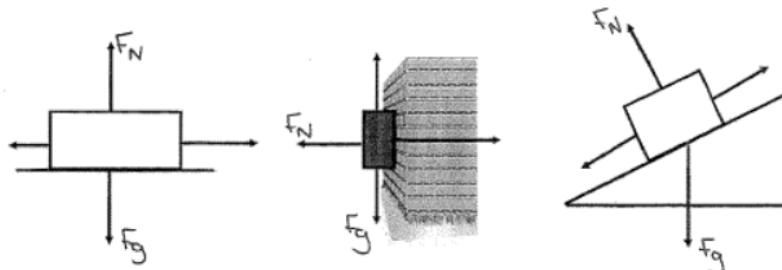
April 27, 2018

1) Review Friction

- Answers Force of Friction Review WS
- Writing Review
- Solving Problems with Common Forces

Test week after next Monday or Tuesday on Common Forces!!!

1. In the diagrams below, label the force of friction and normal force by the appropriate arrows.



2. What physical process causes friction?

Two objects coming in direct contact with one another and the electrons from one surface transfer to the other surface

3. How does friction depend on surface area? Think of a case where surface area could play a significant role in the force of friction.

It depends on the type of surface (some surfaces create far more friction than others) and its nature. A larger area of contact between two surfaces will create a larger source of friction forces.

A case where it could play a significant role would be when it gets too small and the object may begin to dig into the surface

4. Three situations surface friction does not apply

- A) If the mass is unevenly distributed
- B) If there are penetrating spikes or adhesives
- C) If there is air resistance or viscous resistance

5. Why will two identical pieces of smooth metal not fuse together?

They will never have ideal conditions to do so there will always be small amounts of contaminants, air and moisture.

6. Two types of friction? For two given surfaces which force of friction is greater?

Static Friction (applies to a non moving object)
Kinetic Friction (force that opposes the motion)

for an object that starts out at rest the static friction will be greater in order to start the object moving, once the object starts moving the kinetic friction will be greater.

7. Suppose you apply a force to a heavy object. Describe how the forces of friction affect the object's motion.

The static friction will be greater at first and will make it difficult to start the heavy objects movement, however once the object starts moving it will move more easily and kinetic friction will begin to act on the object slowing it down again.

8. A textbook is sitting on a desk. Is there a force of friction present?

Explain

Yes there is a force of friction present. The force of gravity is pulling down on the book and there is a normal force pushing up on the book.

9. In what direction does friction always act?

Friction always acts in the opposite direction to that of the motion of an object. It always strives to slow an object down.

10. Describe how heat is created when two surfaces are rubbed together.

The surfaces rubbing together creates heat because energy is created and this kinetic energy is in the form of heat (this work is being transferred into heat energy)

5-10 min Writing Review: Friction

Suppose you slowly push and increase the applied force on a heavy crate. Describe the two forces of friction and how they affect the crate's motion from the first push until the crate is moving at a constant velocity. Use as much detail as possible.

The two types of friction will be static force of friction and the kinetic force of friction. Applied friction will be less than or equal to the static friction as such the box will remain motionless. As time goes on, the applied force will become greater than the static force of friction and the box will start to move. While the box is in motion, the kinetic force of friction will continue to work against the applied force.