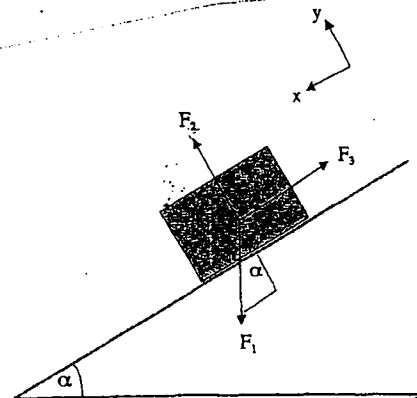


General Physics Week : FORCES!

ALL WORK NEATLY (given information, equation(s), algebra, substitution, and unit analysis for full credit. Don't forget significant figures. The first step for Forces problems is to draw a free body diagram. Use additional sheets as necessary in order to show all work neatly! Box the final answer. Correct in red pen during class.

1. If the block to the right is sliding down the inclined plane, label each of the forces and explain what each is.



2. If we increase the angle in the diagram shown, what will happen to the normal force? What will happen to the force of gravity? The components of the force of gravity?

3. The law of inertia states that no force is required to maintain motion. Why, then, do you have to keep pedaling your bicycle to maintain motion?

4. If forces of 15.0 N and 10.0 N act in opposite directions on a 5.00 kg object, what is the acceleration of the object? If the object was initially at rest when the forces were applied, how far has the object traveled after 5.0 seconds?

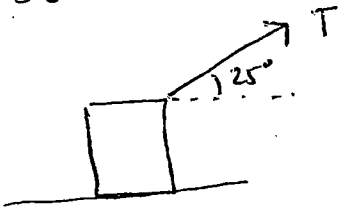
5. In what direction does the force due to drag point? How does this relate to summing forces and terminal velocity?

6. A child pulls a 30 N red wagon with a force of 15 N. What is the magnitude of the force that the wagon exerts on the child? Why?

You're happiest while you're making the greatest contribution. -Robert F. Kennedy

c.) How far will the football travel ~~with force 4~~?

A box has a force of 30.0 N applied at 25°



If the box has a mass of 20.0 kg and the surface is frictionless,

a.) What is the normal force?

b.) What is the net horizontal force and acceleration of the box?

c.) How far will the box travel in 2.0 s ?