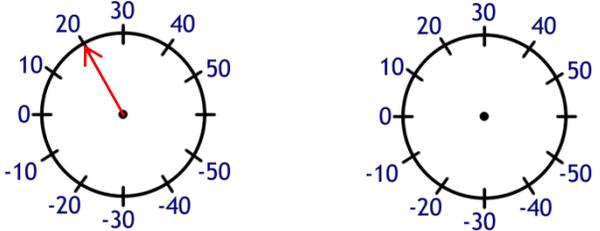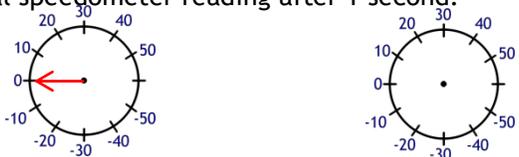1) If you are pushing on an object, but it doesn't move there is a force of _____ opposing its motion.
        a) Static friction b) Air resistance c) Kinetic friction d) Inertia

2) Which of the following is true about the coefficient of friction?
        a) It is a characteristic of how two surfaces interact with each other. Coefficients of friction must be obtained
            for each pair of surfaces.
        b) It is a ratio of two forces- the friction force and the normal force, so it has no units.
        c) It is often a number between 0 and 1, but can occasionally exceed 1.
        d) ALL OF THE ABOVE STATEMENTS ARE TRUE.

3) A perfectly frictionless pair of surfaces would have a coefficient of friction equal to
        a) 1   b) 0.5   c) 0   d) It is impossible to know.

4) Two bank robbers push a 77 kg safe across a floor at a constant velocity to the right. The coefficient of friction
between the floor and the safe is 0.81.

a) Draw a free-body diagram of the safe.	b) Write a net force equation for the VERTICAL and HORIZONTAL direction.
c) Find the friction force acting on the safe.	d) What is their pushing force acting on the safe?
e) Given the initial speedometer of the object, draw the final speedometer reading after 1 second.	f) Which way is the OBJECT moving?

5) A large piece of vinyl fence lays on a dirt surface (down due to high winds). Jodi is trying to pull it horizontally with a rope. She pulls with increasing force until it just starts to move. If her pulling force at this point is 125 N and the mass of the fence piece is 34 kg:

a) Draw a free-body diagram of the vinyl.	b) Write a net force equation for the VERTICAL and HORIZONTAL direction.
c) Find the friction force acting on the vinyl.	d) What is the coefficient of friction between the ground and the vinyl?
e) Given the initial speedometer of the object, draw the final speedometer reading after 1 second.	f) Which way is the OBJECT moving?

6) What is the force required to barely start a reluctant pig moving that is lying on its side in some mud? The mass of the pig is 131 kg and the coefficient of friction for the pig/mud system 0.29.

7) A 7.5 kg sled slides to the left across level ground. When we come into this problem, any pushing forces have stopped and the sled is slowing due to friction. The coefficient of friction between the snow and the sled is 0.12. What is the acceleration of the sled?

After 1 second	Which way is the OBJECT moving?

You are asked to perform an experiment in which you are to determine the coefficients friction of a textbook on two different surfaces (a desk in the class and the carpet in the hall.) You have the following items available for your group to work with:

meter stick   stopwatch   video camera   accelerometer   scale

PLAN: What quantity(ies) would you have to measure in order to determine the coefficient of kinetic friction?

Write a description of how you would find the quantity(ies) needed to determine the coefficient friction. Include which of the available supplies you would need and the procedure you would use during your experiment along with a hand drawn diagram of your experiment.

DATA: What will this look like when you perform the experiment?

CALCULATIONS: What will this look like when you perform the experiment?

RESULTS: How will you know if you results are acceptable?