PRACTICE WITH "Rf" VALUES

Once you have completely prepared your TLC plate and it is in the solvent, please do the following:

1. Record the time _________ minutes

2. Add thirty minutes + 30 minutes

3. What is the "new" time? _________ minutes

4. If you need to have your plate taken out of the solvent by the teacher, you must GENTLY place your piece of aluminum foil and a piece of paper with the time of removal on top of your container.

**DO THAT NOW IF IT WILL BE NECESSARY.**

5. Now I would like you to practice calculating the Rf values. The term "Rf" stands for "ratio to front" and is a method of quantifying how different pigments (chemicals) behave in a chromatography experiment.

6. Look at my example. It is on the next page along side the ones I want you to do.

   The solvent line will be marked in pencil by you just prior to taking the TLC out of the solvent. It is the highest point that the solvent traveled up the plate.

   I have marked one on the sample. For my drawing, the distance from the starting line of the plate to the solvent front is _____ cm. Use your ruler to double check that measurement.

   Next look at the distance that the pigment traveled from its spot on the starting line of the TLC plate to the center of the pigment spot. For my drawing, this distance is _____ cm.

   Then calculate the ratio of the "pigment" distance divided by the "solvent" distance. For my measurements this turns out to be:

   Pigment distance _____cm
   Solvent distance _____cm

   Next you divide, to get _____
   This is the Rf value.

Please practice this process with all five spots on diagram on the next page. Get a thin plastic ruler from me. Make sure you are on the metric scale. Measure the solvent distance first. Measure to the MIDDLE of the pigment spots next. Divide the pigment distance by the solvent distance for each pigment.
8. From your practice Rf calculations, which pigment (#1, 2, 3, 4, or 5) seems to be the most attracted to the white chemical on the TLC plate?

9. From your practice, which seems to be the most attracted to the solvent?

10. Define or describe the reasons you are using to make your decisions.