Learning Opportunity 🖩 Name: _____

Dimensional Analysis: Converting Units

Calculators are permitted on this homework as long as you show your work by setting up your conversion factor expressions below.

1) Suppose an object is moving at 99 *ft/sec.* How fast would you need to drive a car (miles per hour, m.p.h.) to keep pace with this object? Round to the nearest whole number.

2) You are mixing some concrete for a home project, and you've calculated, according to the directions, that you need six gallons of water for your mix. But your bucket isn't calibrated, so you don't know how much it holds. On the other hand, you just finished a two-liter bottle of soda. If you use the bottle to measure your water, how many times will you need to fill it?

3) You're throwing a pizza party for 17 hungry friends, and estimate that each person will eat 4 slices. One pizza has 10 slices. How many pizzas should you order for the party?

☐ REPUBLICAN PARTY
☐ DEMOCRATIC PARTY
☑ PIZZA PARTY

4) You have 1.5 pounds of gold. Find its volume in cm³. The density of gold is 19.3 g/cm³. Round your answer to the nearest tenth.

5) You've been watching a highway construction project that you pass on the way home from school. They've been moving an incredible amount of dirt. You call up the information line, and find out that, when all eighty trucks are running with full crews, the project moves about nine thousand cubic yards of dirt each day. You think back to the allegedly "good old days" when work was all done manually, and wonder how many wheelbarrows full of dirt would be equivalent to nine thousand cubic yards of dirt. You go to your garage, and see that your wheelbarrow is labeled on its side as holding six cubic feet. Since people wouldn't want to overfill their wheelbarrows, you assume that this stated capacity is a good measurement. How many wheelbarrow loads would it take to move the same amount of dirt as those eighty trucks?