Homework 3   Simplifying Cookies

As you have seen, the constraints in the unit problem can be expressed as inequalities using two variables. If you use P to represent the number of dozens of plain cookies and I to represent the number of dozens of iced cookies, one way to write these inequalities is

$$P + 0.7I \leq 110 \qquad \text{(for the amount of cookie dough)}$$

$$0.4I \leq 32 \qquad \text{(for the amount of icing)}$$

$$P + I \leq 140 \qquad \text{(for the amount of oven space)}$$

$$0.1P + 0.15I \leq 15 \qquad \text{(for the amount of the Woos' preparation time)}$$

1. Find at least one equivalent inequality for each of the "cookie inequalities" above. If possible, find an equivalent that you think is simpler than the inequality given.

2. For each of the original inequalities, do each of these steps.

   a. Find a number pair for P and I that fits the inequality and a number pair that does not.

   b. Verify that the number pair that fits the inequality also fits any equivalents you found for that inequality.

   c. Verify that the number pair that does not fit the inequality also does not fit any of the equivalents you found for that inequality.