This homework intention is for us and for you to get an idea of how developed your problem solving skills are. We will use some of the problems below as the starting point of our first workshop class tomorrow.

You should turn in two versions of your answers. The first is one you will produce completely on your own. You should spend around one and a half hour working alone on the problems below and then write out your answers completely and clearly. After doing that, you should spend some time working with your workshop-mates, comparing results, asking and answering each other’s questions. Once you feel you are “done” write a revision to your answers on a completely new sheet of paper.

We will spend some time in class talking about problem solving strategies. To prepare for this discussion, write down (in your revised answer key) a sentence or two describing your approach to each problem and the effect of working with others on your thinking process.

Before starting, remember that problem solving is what you do when you do not know exactly what to do!

1) Northfield is advertised as the home of cows, colleges, and contentment. How many content cows could you pack into Sayles-Hill lounge main floor? (Courtesy of Bill Titus, from his Phys 115 class)

2) At the conclusion of a soccer game whose two teams each included 11 players, each player on the winning team “gave five” to (slapped hands with) each player of the losing team. Each player on the winning team also gave five to each other player on the winning team. How many fives were given?

3) If the universe was such that the sun was the size of a basketball, how far away would we find Neptune from the center of Northfield’s Central Park (next to the old middle school that Carleton just bought),
   a) in feet?
   b) in miles?
   c) in city blocks?

Potentially useful information
A city block is 500 feet (there are about 10 city blocks in a mile)
A basketball has a 1 feet diameter
The sun has a 870000 miles diameter
The distance between the sun and Neptune is 2795x10^6 miles
The distance between the sun and the earth is 92.96x10^8 miles
1 mile is 5280 feet