Math 110 Chapter 2.2: Inverse Proportions Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. If a group of 20 households must support one disabled-person household at a cost of $40,000/year, how much does each of the 20 households have to pay per year?

2. If that group of 20 households shrinks to 10 households (still aiming to support one disabled-person household at $40k/year), now how much does each have to pay?

3. If that group of 20 shrinks to 15 instead of 20 or 10, now how much each?

-------------------------------------------------

Problems 4-8 are not related to problems 1-3.

-------------------------------------------------  
4. If a group of 10 households each pays 6% of their income to support a retired household, and then the group shrinks to 5 households instead, now how much (as a percent) do they each need to pay?

5. If that group of 10 households shrinks to 2 instead, now how much (as a percent) do they need to pay each?

6. If that group of 10 shrinks to 4 instead, now how much each?

7. If that group of 10 shrinks to 6 instead, now how much each?

8. If that group of 10 shrinks to 7 instead, now how much each?

Hints on the next page, if you need them.

Hints:

#3: the answer is not $3000--you can see this by multiplying $3000 by 15 households, getting $45,000 instead of $40,000.

#4: the answer is not 3%.

#5: Going from 10 to 2 is a factor-of-5 reduction.

#6: You could do this as a factor reduction from #4, but it's easier to base your answer on #5. Or maybe try it both ways, to see if your answers agree.

#7: You could do this as a factor reduction from #4, but it's easier to base your answer on #5. Or maybe try it both ways, to see if your answers agree.

#8: You could do this as a factor reduction from #4. Or you could take your answer from #4, but imagine it was 1 household instead of 2, then scale the result by 7. Or maybe try it both ways, to see if your answers agree.