Inverse Proportions Homework Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. If a group of 18 households will support one disabled household at a cost of $27,000/year, how much does each of the 18 households pay per year?
2. If that group of 18 households shrinks to 9 households, still aiming to support one disabled household at $27,000/year, now how much does each pay? Give a dollar amount and also describe it using a phrase like "half as much as before" or "1/10th as much as before" or "three times as much as before".

$\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_ as much  
  
3. If that group of 18 shrinks to 12 instead of 18 or 9, now how much does each pay?  Give a dollar amount and also use a phrase like "two-thirds as much" or "five-halves as much" (compared to problem #1 above, not problem #2)

$\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_ as much  
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The following problems are not directly related to problems 1-3 above.  
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4. If a group of 12 households each pays 4% of their income to support a retired household, and then the group shrinks to 6 households instead, now how much (as a percent) do they each need to pay? Also describe your result in words as above.

\_\_\_%

\_\_\_\_\_\_\_\_ as much (compared to when it was 12 households)  
  
5. If that group of 12 shrinks to 4 instead, now how much (as a percent of their income) do they each need to pay?  
\_\_\_%

\_\_\_\_\_\_\_\_ as much (compared to when it was 12 households)  
6. If that group of 12 shrinks to 3 instead, now how much?

\_\_\_%

\_\_\_\_\_\_\_\_ as much (compared to when it was 12 households)  
7. If that group of 12 shrinks to 8 instead, now how much?

\_\_\_%

\_\_\_\_\_\_\_\_ as much (compared to when it was 12 households)

8. If that group of 12 shrinks to 7 instead, now how much?

\_\_\_%

\_\_\_\_\_\_\_\_ as much (compared to when it was 12 households)

9. If that group of 12 shrinks to 9 instead, now how much?  
\_\_\_%

\_\_\_\_\_\_\_\_ as much (compared to when it was 12 households)

10. Organize your results from above in this table:

|  |  |  |
| --- | --- | --- |
| # of households | % paid by each | in-words description: \_\_\_\_\_\_\_\_\_\_ as much |
| 12 | 4% | (no description--this is the original case) |
| 9 |  | as much |
| 8 |  | as much |
| 7 |  | as much |
| 6 |  | as much |
| 4 |  | as much |
| 3 |  | as much |

11. Write an equation involving the # of households, the % of their income each household pays, and perhaps some other number: