Name: _____

Date: _____ Period: _____

# Density Problems - Calculations with Grids Std4e

**Assignment 1 - Directions:** Use Table C-6 on p. 916 of your textbook to find densities for the elements listed. Then rewrite the specific heat in the next column as shown in the examples. Last, solve the problems give in the far right column on the back of this paper. Number from 1-10 on the back of this paper, or a separate sheet of paper, and show the grids for your calculations and circle your answers. Units of measure are essential. See examples at the beginning of chart of this page.

| Elements | Density | _____ g = _____ $cm^3$ | Number from 1-10 on the back of this paper. Show your calculations (with grids) by each number. |
|---|---|---|---|
| | | | |
| Ex - a. sulfur | 2.08 $g/cm^3$ | 2.08 g S = 1 $cm^3$ S | If you are given 13 $cm^3$ of S, how much would it weigh in grams? |
| Ex - b. calcium | 8.65 $g/cm^3$ | 8.65 g Ca = 1 $cm^3$ Ca | If you are given 41.7 g of Ca, how many $cm^3$ of Ca would you have? |
| 1. cobalt | | | If you are given 24 $cm^3$ of Co, how much would it weigh in grams? |
| 2. boron | | | If you are given 105 g of B, how many $cm^3$ of B would you have? |
| 3. gallium | | | If you are given 11 $cm^3$ of Ga, how much would it weigh in grams? |
| 4. iron | | | If you are given 82.2 g of Fe, how many $cm^3$ of Fe would you have? |
| 5. mercury | | | If you are given 13 $cm^3$ of Hg, how much would it weigh in grams? |
| 6. oxygen | | | If you are given 91.9 g of O, how many $cm^3$ of O would you have? |
| 7. zinc | | | If you are given 2.91 $cm^3$ of Zn, how much would it weigh in grams? |
| 8. silver | | | If you are given 77.3 g of Ag, how many $cm^3$ of Ag would you have? |
| 9. tin | | | If you are given 2.77 g of Sn, how many $cm^3$ of Sn would you have? |
| 10. tungsten | | | If you are given 152 g of W, how many $cm^3$ of W would you have? |

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**Solutions to example problems in Assignment 1:**

**Ex – a** (using grids, shown here as fractions)

$$\frac{13\ cm^3\ of\ S}{1} \times \frac{2.08\ g\ of\ S}{1\ cm^3\ of\ S} = \mathbf{27\ g\ of\ S}$$

**Ex – b** (using grids, shown here as fractions)

$$\frac{41.7\ g\ of\ Ca}{1} \times \frac{1\ cm^3\ of\ Ca}{8.65\ g\ of\ Ca} = \mathbf{4.82\ cm^3\ of\ Ca}$$

**Assignment 2 - Directions:** Solve each of these problems as you did in Assignment 1 above. Use the densities from Assignment 1. Show your work. **If you do not use grids, you will not get any points for this assignment**

11. cobalt — If you are given 214 g of Co, how many $cm^3$ of Co would you have?
12. boron — If you are given 42.7 $cm^3$ of B, how much would it weigh in grams?
13. gallium — If you are given 64.9 g of B, how many $cm^3$ of B would you have?
14. iron — If you are given 10.4 $cm^3$ of Fe, how much would it weigh in grams?
15. mercury — If you are given 175.9 g of Hg, how many $cm^3$ of B would you have?
16. oxygen — If you are given 64,310 $cm^3$ of O, how much would it weigh in grams?
17. zinc — If you are given 20.78 g of Zn, how many $cm^3$ of Zn would you have?
18. silver — If you are given 7.369 $cm^3$ of Ag, how much would it weigh in grams?
19. tin — If you are given 0.3813 $cm^3$ of Sn, how much would it weigh in grams?
20. tungsten — If you are given 7.917 $cm^3$ of W, how much would it weigh in grams?