

NAME:

HONORS CHEMISTRY

SECTION:

DIMENSIONAL ANALYSIS

Use the conversion factors listed below and your knowledge of SI prefixes to solve the problems. Show all your work.

1. Convert 8.3 liters into teaspoons.

2. Convert 3.1×10^4 km to yards.

3. Convert \$24.75 into rubles.

4. Convert 390 uL/min to L/hour.

Useful Conversion Factors

3 tsp = 1 tbsp
1.06 quart = 1 L
1 cup = 250 mL
4 cups = 1 quart
1 tbsp = 15 mL
2.54 cm = 1 in
1 day = 100 temps
1 dollar = 1.84 marks
1 mark = .57 yen
1 yen = 5000 lira
100 lira = 14 francs
5 francs = 3 baht
1 baht = 10 rubles

5. In 1978, Franklin L. Everett, an engineering professor, proposed a decimal time system. In this system, Everett divided the day into 100 equal units, called temps. He used kilotemps in place of weeks and decitemps and centitemps instead of minutes and seconds. Use Everett's system to convert 4.7×10^6 seconds to kilotemps.
6. Thomas Jefferson developed his own system of measurement using decimal notation (which was never adopted in the US). In Jefferson's system, 10 inches made 1 foot; 10 feet = 1 decad; 10 decads = 1 rood; and 10 roods = 1 furlong. Use Jefferson's system to convert 1170 km into furlongs.