

## Apothecary and Household Systems

The **apothecary system** is a system that is sometimes used in measuring drug dosages. Some of the primary units, together with their relations, are given in the Apothecary Equivalents box below.

Apothecary Equivalents	
1 fl oz	= 8 fl dr
4 mL	= 1 fl dr
60 minims	= 1 fl dr
1 g	= 15 gr
1 gr	= 60 mg
1 ML	= 16 minims
1 pt	= 16 fl oz
1 qt	= 2 pt

When using the apothecary system the unit of measure should be written before the numerical value. If the numerical value is less than 1, fractions are used as opposed to decimals. The exception to this rule is the fraction  $\frac{1}{2}$ . To indicate half, ss is used. For the most part, in the apothecary system, Roman numerals are used for dosages and lowercase letters are used instead of uppercase letters. When Roman numerals are used, a bar is often placed over the numerals to avoid errors and confusion. If you need to refresh your skills with Roman numerals, refer to the Roman numerals brush-ups on the Dolciani website.

The **household system** is a system used when dispensing medication in the household. The household equivalents box below shows the units and their associated equivalents used in the system.

Household Equivalents	
60 drops (gtt)	= 1 tsp
1 fl oz	= 30 ml
2 tbs	= 1 oz
6 fl oz	= 1 teacup
8 fl oz	= 1 glass
16 oz	= 1 lb
1 cup	= 8 fl oz
5 mL	= 1 tsp

### Model Problems

1. 64 fl oz is how many pints?

We write the conversion in such a way so we can cancel or simplify.

$$4$$
$$64 \text{ fl oz} \left( \frac{1 \text{ pt}}{16 \text{ fl oz}} \right) = 4 \text{ pts}$$

2. If a recipe calls for 5 tsps of vinegar, how many mL should you use?

$$5 \text{ tsps} \left( \frac{5 \text{ mL}}{1 \text{ tsp}} \right) = 25 \text{ mL}$$

### Practice Problems

1. 7 fl oz is how many fluid drams?
2. 20 grains is how many grams?
3. How many fluid drams are in 48 mL?
4. How many fluid ounces are in 2 qts?
5. 20 teacups is how many fluid ounces?
6. 22 fl oz is how many cups?
7. A person is instructed to pour 9 cups of water into a container, but he pours 78 fl oz instead. Did he pour too much or too little, and by how much?
8. A patient drinks 4 teacups of coffee and 2 ½ glasses of water. What is the total fluid intake, in fluid ounces, for this patient?
9. A patient drinks 17 fl oz of water, 21 fl oz of tea, and 12 fl oz of coffee. What is the total fluid intake, in glasses, of this patient?
10. How many tablespoons are in 3 lbs?

### Answers

1. fl dr 56
2. g 1.33
3. 12 fl dr
4. 64 fl oz
5. 120 fl oz
6. 2.75 cups
7. 72 fl oz, too much by 6 fl oz
8. 44 fl oz;
9. 6.25 glasses
10. 96 tbs