



# Math Study Strategies

## Math for Nursing Intravenous Medication Using a 3 cc Syringe

Some medications are diluted before parenteral administration.

To administer the correct dosage prescribed by the physician the nurse needs to convert all units of measure to find out the necessary amount expressed in mL.

### Example:

The physician ordered 0.75 mg on a medication. Strength available is 500 mg per 1 mL. How many mL will you give?

1 mcg (or 1  $\mu$  ) is thousand part of a gram

Therefore 1000 mcg = 1 mg

Because is asked to find out the amount in mL start with mL in the numerator

Using the dimensional analysis the ratios will be written as follow

$$\frac{1.5 \text{ mL}}{500 \text{ mcg}} \times \frac{1,000 \text{ mcg}}{1 \text{ mg}} \times \frac{0.75 \text{ mg}}{\text{dose}}$$

cross cancelling all same units, the answer will be  $\frac{1125}{500} = 2.25 \text{ mL}$



If the amount to be administered is over 1 mL but less than 3 mL use 3 cc size syringe that has ten calibrations indicating that the syringe is calibrated in tenths. The large line indicates 0, 0.5 and full cc measures, the shorter calibrations between these, identifies the tenths.

Because the answer is 2.25 mL and the syringe is calibrated in tenths, round 2.25 to the nearest tenth.

Therefore the nurse will administer **2.3 mL of medication.**