5.2: Math Basic Concepts

Measuring Devices

Depending on the type and amount of medication that is being administered, there are several devices used for measuring and administering medications.

A medication cup that is composed of plastic or paper is used to hold and dispense oral medications to a patient. A paper cup is used to administer nonliquid medications, such as tablets or capsules. A plastic medication cup is used to dispense both liquid and nonliquid medications, and calibrated cups are also used to measure liquid medications prior to administration. Calibrated medication cups have labelled measurements such as ounces (oz), cubic centimeters (cc), milliliters (mL), teaspoons (tsp), and tablespoons (Tbs). See Figure \(\PageIndex{1}\) for an image of a calibrated medication cup.

![Medication Cups](image1)

Oral syringes are used to administer liquid medications via the oral route, especially to children, because they allow for precise measurement of small doses. See Figure \(\PageIndex{2}\) for an image of an oral syringe. Oral syringes have
different tips than syringes used for injections.

Figure \(\PageIndex{2}\): Oral Syringes

Syringes are used when administering medications through the parenteral route (i.e., intradermally, subcutaneously, intramuscularly, or intravenously). Syringes used for injections are available in many sizes and are selected by the nurse based on the type of injection and the type of medication administered. Common syringe sizes range from 1 mL to 60 mL. See Figure \(\PageIndex{3}\)^3 for an image comparing various sizes of syringes. Syringes are calibrated based on the volume they hold. For example, a 1-mL syringe is calibrated in hundredths and a 3-mL syringe is calibrated in tenths. Syringes that hold larger volumes, such as 5-, 10-, and 12-mL syringes are usually calibrated in fifths (two tenths). Large syringes, such as 60-mL syringes, are calibrated in whole numbers.

Figure \(\PageIndex{3}\): Various Sizes of Syringes

Special syringes are used to administer insulin and are calibrated in units. See Figure \(\PageIndex{4}\)^4 for an image of an insulin syringe. Insulin syringes are easily identified by a standard orange cap.
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