

CALCULATION of DRUG DOSAGES

Stage 1: Using the formula below, calculate the total required dosage based on given the body weight.

$$\text{Weight (kg)} \times \text{Dosage Ordered (per kg)} = Y \text{ (Required Dosage)}$$

$$\frac{\text{Amount DESIRED (D)}}{\text{Amount on HAND (H)}} \times \text{QUANTITY (Q)} = Y \text{ (Tablets Required)}$$

CALCULATION of DRUG DOSAGES

- Example 2: 1200 mg of Klor-Con is ordered. This medication is only available as 600 mg per tablet. How many tablets should the nurse give?

Step 1: Determine your givens.	Amount desired (D) = 1200 mg Amount on hand (H) = 600 mg Quantity = 1
Step 2: Plug in what you know into the formula and simplify.	$\frac{1200 \text{ mg}}{600 \text{ mg}} \times 1 = \boxed{2 \text{ tablets}}$

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- Example : Dilantin-125 is available as 125 mg/5 mL.
Dilantin-125, 0.3 g PO, is
- ordered. How much should be administer to the patient?

Step 1: Determine your givens.	Amount desired (D) = 0.3 g Amount on hand (H) = 125 mg Quantity = 5 mL
Step 2: Convert 0.3 g to mg (since the ordered dose is in grams but the drug is available on hand in milligrams).	$0.3 \text{ g} \times 1,000 \text{ mg/g} = 300 \text{ mg}$
Step 3: Plug in what you know into the formula and simplify.	$\frac{300 \text{ mg}}{125 \text{ mg}} \times 5\text{mL} = \boxed{12 \text{ mL}}$

Calculation of Intravenous Drip Rates

- In these types of calculations, for a given volume, time period, and drop factor (gtts/mL), the required IV flow rate in drops per minute (gtts/min) is calculated.
- Note: Since a fraction of a drop is not possible to give to a patient, it is usual to round the answers to the nearest whole number.

Calculation of Intravenous Drip Rates

$$\frac{\text{Volume (mL)}}{\text{Time (min)}} \times \text{Drop Factor (gtts/mL)} = Y \text{ (Flow Rate in gtts/min)}$$

Example 1: Calculate the IV flow rate for 250 mL of 0.5% dextrose to be administered over 180 minutes. The infusion set has drop factor of 30 gtts/mL.

	Drop factor: 30 gtts/mL
Step 2: Use the formula to calculate the IV flow rate. No unit conversions are required. Remember to round the final answer to the nearest whole number.	$\frac{\text{Volume (mL)}}{\text{Time (min)}} \times \text{Drop Factor} \left(\frac{\text{gtts}}{\text{mL}} \right) = Y \text{ (gtts/min)}$ $\frac{250 \text{ mL}}{180 \text{ min}} \times 30 \left(\frac{\text{gtts}}{\text{mL}} \right) = 41.66 \text{ gtts/min}$

Calculation of Intravenous Drip Rates

- Example 2: The infusion set is adjusted for a drop factor of 15 gtts/mL. Calculate the IV flow rate if 1500 mL IV saline is ordered to be infused over 12 hours.

Step 1: Determine your givens.	Volume: 1500 mL Time: 12 hours Drop factor: 15 gtts/mL
Step 2: Convert 12 hours into minutes.	12 h x 60 min/h = 720 min
Step 3: Use the formula to calculate the IV flow rate (gtts/min).	$\frac{\text{Volume (mL)}}{\text{Time (min)}} \times \text{Drop Factor} \left(\frac{\text{gtts}}{\text{mL}} \right) = Y \text{ (gtts/min)}$ $\frac{1500 \text{ mL}}{720 \text{ min}} \times 15 \left(\frac{\text{gtts}}{\text{mL}} \right) = 31.25 \text{ gtts/min}$

Therefore, the IV flow rate is 31 gtts/min.

Anesthetic dosage

- Anesthetic dosage = $\frac{\textit{Scientific dose} \times \textit{weight}}{\textit{concentration} \times 10}$
- percentage = $\frac{\textit{part Value}}{\textit{All value}} \times 100$