IV DRUG CALCULATION FORMULAS

1. Basic IV Flow Rate (pump):

$$\text{ml/hr} = \frac{\text{volume } (ml)}{\text{total time } (hr)}$$

2. Basic IV Flow Rate (gtt/min):

$$\text{gtt/min} = \frac{\text{total volume } (ml) \text{ X drop factor } (gtt/ml)}{\text{total time } (minutes)}$$

$$\text{gtt/min} = \frac{\text{rate } (ml/hr) \text{ X drop factor } (gtt/ml)}{60 \ (min/hr)}$$

3. Heparin & Insulin Drips:

1. Calculate drug concentration $= \dfrac{\text{amount of drug in solution } (units)}{\text{amount of solution } (ml)}$

2. $\text{ml/hr} = \dfrac{\text{dose } (units/hr)}{\text{concentration } (units/ml)}$

This formula is also used if you have a med in mg/hr

4. Steps for IV Drug Calculations:

1. Change weight to kg: Divide weight in lbs. by 2.2
1. Calculate drug concentration $= \dfrac{\text{amount of drug in solution } (mg)}{\text{amount of solution } (ml)}$
3. Convert "mg" to "mcg": Multiply by 1000
4. Plug in the correct formula

5. IV Drug Calculation Formulas:

Use one of these formulas if you have been given the ml/hr.

1. $\text{mcg/kg/min} = \dfrac{\text{concentration } (mcg/ml) \text{ x infusion rate } (ml/hr)}{\text{wt } (kg) \text{ x } 60 \ (min/hr)}$

2. $\text{mcg/min} = \dfrac{\text{concentration } (mcg/ml) \text{ x infusion rate } (ml/hr)}{60 \ (min/hr)}$

3. $\text{ml/hr} = \dfrac{\text{wt } (kg) \text{ x dose } (mcg/kg/min) \text{ x } 60 \ (min/hr)}{\text{drug concentration } (mcg/ml)}$

If you do not have a weight, leave out that part of the formula.

Use this formula to find how many ml/hr you need if your dose is mcg/kg/min or mcg/min.