#1

Order: myDrug 1 g.

The package insert info is:

Add 100 mL sterile water to 1 g of myDrug and infuse in 20 min.

The tubing is labeled 10 drops Per [redacted] mL.

Calculate the flow rate.

$$\frac{100\ mL}{1\ g} \qquad \frac{10\ drops}{1\ [redacted]\ mL} \qquad \frac{100\ mL}{20\ min}$$

$$\frac{100\ mL}{20\ min} \longrightarrow \frac{drops}{min}$$

$$\frac{100\ mL}{20\ min} \times \frac{10\ drops}{1\ mL} = \frac{50\ drops}{min}$$

#2

Order: 1500 mL 5% D/W with 500 mg lidocine at 1 mg/min.

Calculate the flow rate if the drop factor is 20 drops per mL.

$\frac{1\ mg}{1\ min}$ want $\rightarrow$ $\frac{drop}{min}$

$\frac{500\ mL}{500\ mg}$ $\frac{1500\ mL}{500\ mg}$ $\frac{1\ mg}{1\ min}$ $\frac{20\ drops}{1\ mL}$

$$\frac{1\ mg}{1\ min} \times \frac{1500\ mL}{500\ mg} = \frac{3\ mL}{1\ min}$$

$$\frac{3\ mL}{1\ min} \times \frac{20\ drops}{1\ mL} = \frac{60\ drops}{min}$$

#3

Order: 750 mL of 5% D/W with 5 units of synthetic oxytocin.

Your patient must receive 10 milliunits of this drug per minute. The drop factor is 10 drops per mL.

Calculate the flow rate.

(note: 1000 milliunits = 1 unit)

$$\frac{750\ mL}{5\ units} \qquad \frac{10\ mU}{1\ min} = \frac{.01\ U}{1\ min} \qquad \frac{10\ drops}{1\ mL} \qquad \frac{drops}{min} = ?$$

$$\frac{10\ mU}{1\ min} \times \frac{1\ unit}{1000\ mU} = \frac{.01\ unit}{1\ min}$$

$$\frac{750\ mL}{5\ units} \times \frac{.01\ units}{1\ min} = \frac{1.5\ mL}{1\ min}$$

$$\frac{1.5\ mL}{1\ min} \times \frac{10\ drops}{1\ mL} = 15\ drops/min$$

Some meds are given by body weight.

ex.

10 mg/kg/min

this says "every minute give the patient 10mg of the drug for every kg they weigh." → $\frac{10\ mg}{kg \times min}$

So if the patient weighs 50 kg they would receive

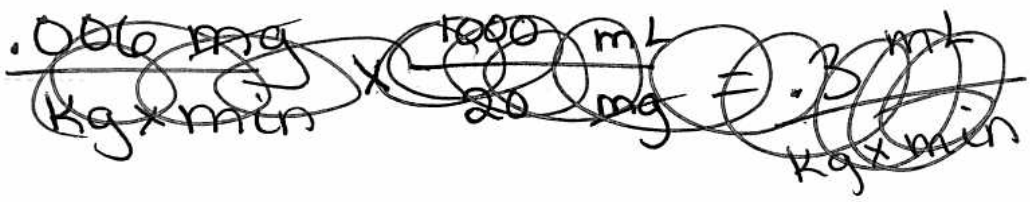
$$50\ \cancel{kg} \times \frac{10\ mg}{\cancel{kg} \times min} = \frac{500\ \cancel{mg}}{1\ min}$$

#5

Order: 1000 mL 5% D/w with 20 mg Aredia, 0.006 mg/Kg/min IV. The patient weighs 70 Kg and the drop factor is 10 drops per m Calculate flow rate.

$$\frac{10 \text{ drops}}{1 \text{ mL}} \quad \frac{1000 \text{ mL}}{20 \text{ mg}} \quad \frac{.006 \text{ mg}}{\text{Kg} \times \text{min}} \quad \frac{\text{drops}}{\text{min}} = ?$$

70 Kg



$$\frac{.006 \text{ mg}}{\text{Kg} \times \text{min}} \times 70 \text{ Kg} = \frac{.42 \text{ mg}}{\text{min}}$$

$$\frac{.42 \text{ mg}}{\text{min}} \times \frac{1000 \text{ mL}}{20 \text{ mg}} = \frac{21 \text{ mL}}{\text{min}}$$

$$\frac{21 \text{ mL}}{\text{min}} \times \frac{10 \text{ drops}}{1 \text{ mL}} = \frac{210 \text{ drops}}{\text{min}}$$

Flow rates based on BSA

Order: 10 mg of vancomycin in 100 mL 0.9% NS to be infused at a rate of 500 mg per square meter per hour. Your patient's BSA is 1.2 square meters. How many mL per hr should they receive?

$\frac{10\ mg}{100\ mL}$ $\frac{500\ mg}{m^2 \times hr}$ $\frac{mL}{hr} = ?$

$$\frac{500\ mg}{m^2 \times hr} \times 1.2\ m^2 = \frac{600\ mg}{hr}$$

$$\frac{600\ mg}{1\ hr} \times \frac{100\ mL}{10\ mg} = \frac{6000\ mL}{hr}$$

#7

A patient is receiving an IV of 1000 mL of a drug. The flow rate is 20 drops per min, the drop factor is 10 drops per mL. How many hours will the infusion take?

$$1000\ mL \quad \frac{20\ drops}{1\ min} \quad \frac{10\ drops}{1\ mL} \quad hr = ?$$

$$1000\ \cancel{mL} \times \frac{10\ drops}{1\ \cancel{mL}} = 10{,}000\ drops$$

$$10{,}000\ drops \times \frac{1\ min}{20\ drops} = 500\ min$$

$$500\ min \times \frac{1\ hr}{60\ min} = 8.\overline{3}\ hrs.$$