1. You are responsible for providing the proper dose of etomidate to your partner so that he can initiate the RSI procedure for your patient. The patient weighs an estimated 175 pounds. You are to draw up 0.3 mg/kg of etomidate into the appropriate syringe. How many mg are required? How many mL will you have to draw up? How many vials will be required?

2. Now the patient is asleep and you give to your partner the syringe of succinylcholine that you drew up, based upon the patient’s weight. The dose is 1.5 mg/kg. How many mg are required? How many mL did you put in the syringe?
3. Now it is time for the vecuronium to be administered to the previous patient. The dose is 0.01 mg/kg. How many mg are required? How many mL are in the syringe?

4. You are going to be initiating a nitroglycerine drip in the field for a patient with a confirmed STEMI. You have your microdrip tubing prepared and are to start the drip at 15 mcg/min. Your patient says that he weighs about 180 pounds. How many mL per hour are necessary to satisfy this requirement? How many drops per minute are necessary if your pump breaks down?
5. You are responsible for starting a diltiazem drip, using microdrip tubing, for a 200 pound male patient who has had his heart rate controlled via a bolus of diltiazem several minutes ago. The protocol states that you are to mix 20 mg of diltiazem in a 150 mL bag of D5W and deliver it at a rate of 5 mg/hr. How many mL must be added to the bag from the vial? How many mL an hour will have to be delivered to the patient? How many drops per minute would be necessary if your pump were to fail?

6. You are resuscitating a patient who is in cardiac arrest with a rhythm of ventricular fibrillation. You are responsible for all drug administration, so your first priority is the bolus of epinephrine that you deliver. Now you need to administer 1.5 mg/kg of lidocaine, as that is the only antidysrhythmic that your service currently stocks. How many mg are necessary for your patient who weighs 270 pounds? How many preloaded syringes are necessary to satisfy this requirement?
7. Your patient from above is resuscitated after a couple of rounds of drug therapy, and you now must start a lidocaine drip at 3 mg/min, using microdrip tubing. How many mL per hour are necessary to satisfy this order? How many drops per minute are necessary if the pump fails?

![Lidocaine](image1.png)

8. You have a patient who is presenting with an exacerbation of congestive heart failure. After the administration of nitroglycerine you decide to give the patient furosemide at a dose that is twice that of his daily dose. The patient normally takes 40 mg of furosemide daily. How many mg will you give to the patient? How many mL will you draw up from the vial?

![Furosemide](image2.png)
9. You are treating a patient who has a possible broken hip and you wish to provide the patient with some pain relief. You decide that the best course of action would be to deliver 75 mcg of fentanyl. How many mL will you deliver?

10. Your patient from above is not tolerating the situation very well, and you decide that she would be best served to forget the entire ordeal. You decide that 2 mg of Versed would be in order. How many mL will you draw up and deliver to the patient?

11. Your patient from above starts to break out in hives and you wish to administer some diphenhydramine, at a dose of 26 mg (not realistic, but makes for a math problem!). How many mL will you deliver?
12. This same patient is really having problems that you believe are associated with the administration of the Versed, so you decide to try to reverse its effects by administering some Romazicon. The dose is 0.2 mg. How many mL will you deliver?

![Versed](image1.png)

13. Problems are still abound.....maybe it’s the fentanyl? You decide to administer 0.4 mg of naloxone. How many mL will you deliver?

![Naloxone](image2.png)

14. You are working with a patient in cardiogenic shock and decide to initiate a dopamine drip at a rate of 5 mcg/kg/min. You are using microdrip tubing and the patient weighs 144 pounds. How many mL per hour will you need to deliver? How many drops per minute would be necessary if your pump failed? Answer the same two questions using 45 drop tubing. (Total of 4 questions).

![Dopamine](image3.png)
15. You are underway on a long transfer and have been ordered to add one amp of phenytoin to a 150 mL bag of saline, which is to be run in over 1 hour. How many drops per minute are you required to run using microdrip tubing because your ambulance service is too cheap to replace the pump on this critical care ambulance? What if you used 10 gtts/mL tubing?

16. You are treating a patient who has had a severe exposure to organophosphates, and protocol dictates that 7 mg of atropine be delivered to your patient. How many mL are necessary?

17. You are going to start a nitroglycerine drip for your patient, but your partner forgot to re-stock after the last call in which you used your nitro drip set-up. So, you must place 30 mg of nitroglycerine into a 100 mL bag and deliver it via microdrip tubing at a rate of 40 mcg/min. How many mL will you add to your bag? How many mL per hour will be delivered to the patient in order to satisfy the need? How many drops per minute will that be if you must do it by hand?
18. You have a patient who is suffering from a severe hypertensive emergency and are ordered by medical control to deliver 20 mg of labetalol over 2 minutes via IV push. You are then to administer 2 mg/minute afterward to achieve a blood pressure that is reduced by 30% over where it started. You routinely mix your labetalol infusions by adding 100 mg to a 150 mL bag, using 45 drop tubing. How many mL will have to be delivered in order to satisfy the original IV push order? How many mL per hour would be delivered to satisfy the infusion order? How many drops per minute does that equate to?

19. You have a patient who needs 20 mg of ketorolac. How many mL will you draw up?

20. You have a patient in SVT refractory to adenosine. You decide to administer 0.25 mg/kg of diltiazem IV push. The patient weighs 145 pounds. How many mL will you draw up?