Is this question asking for a drip rate or a pump rate?

Pump rates refer to what youâ€™ll set your IV pump toâ€¦ whether it be 50 ml/hr, 25 ml/hr, 600 ml/hr, or 83.3 ml/hr.

Drip rates refer to the number of drops at which the IV fluid is dripping at. Basically, the drip rate reflects the number of drops per minute. You canâ€™t measure a partial drop, so rounding is important with drip rates. Make sure you understand the rules your nursing school has about rounding so you make sure to answer the question appropriately.

IV Pumps Rates

This can be tricky, but I promiseâ€¦ itâ€™s doable. In the real world, your IV meds that need to be given via a pump will typically either tell you the rate to plug in, or they will be ordered to be administered over a certain duration of time (for example, infuse over 3 hours, infuse over 30 minutes, infuse over 6 hours) and many pumps today will enable you to enter the duration and auto calculate the rate.

Honestly, in my humble opinionâ€¦ I truly believe it is safest if the ordering provider orders the medication to be given over a certain amount of time, and we as the administering nurse merely plug in exactly that time, and the pump calculates your rate. However, we must at least know how to do this otherwise in the event that we work somewhere that does not have pumps capable of this, or if there is a disaster or issue where you need to infuse by gravityâ€¦ then the whole drop factor/drip-rate situation comes into play.

Keep in mindâ€¦ the actual probability of that occurring is small, depending on where you work. However, it doesnâ€™t hurt to at least have a basic understanding of how one would go about calculating a drip rate. But I digressâ€¦

You are most likely going to administer an IV medication on a pump, in milliliters per hour, or ml/hr. Figuring this out is pretty straightforward. You take the total milliliters in the dose to be administered and you divide it over the number of hours you want it to infuse over. Remember, it is milliliters per hour. If you can just remember that and repeat that to yourself in your head, it almost tells you the calculation for you. How many milliliters will I infuse every single hour?

This is pretty straightforward, except the only part that can be somewhat tricky is if you need to give the medication over less than an hour.

If you need to give an IV in less than an hour, you need to figure out what fraction of an hour theyâ€™re asking you to give the medication overâ€¦ is it 15 minutes, 30 minutes, or 45 minutes? 15 minutes is Â¼ of an hour, so 0.25. 30 minutes is Â½ of an hour, so 0.50, and 45 minutes is 0.75. Keep that in mind if youâ€™re asked to figure out the rate of something administered over less than 1

hour.

Remember, youâ€™re administering this in milliliters per hour, so we have to have our time in hours!

Example 1:

Administer 500 ml over 2 hours. Whatâ€™s the rate? 500 ml Ã· 2 hours = 250 ml/hr

Example 2:

Administer 50 ml over 30 minutes. Whatâ€™s the rate? 50 ml Ã· 0.5 hours = 100 ml/hr

Example 3:

750 ml over 6 hours. Whatâ€™s the rate? 750 ml Ã· 6 hours = 125 ml/hr

Drip Rates

Full disclosure, guysâ€¦ the NRNSG team never, ever uses this in practice. Like, none of us. We actually had to look up this because we all learned it in school, but never actually use it in practice. That will probably make you feel better or worseâ€¦ who knows. Some nurses that work out in the field or in very specific areas and specific situations may use thisâ€¦ and thereâ€™s always planning for the absolute worse (power goes out, all backup generators go out, all batteries die, a massive influx of 9 million patients and unable to use pumps for everyoneâ€¦)

Also, keep in mind that rounding is important when calculating these drip rates because you canâ€™t give a fraction of a drop. Your instructor should have specifications for how this will be done for your exams (up, down, what to round it to).

First, you must know the kind of tubing youâ€™re dealing with so you know the drop rate. How many drips per milliliter are we talking here? 15 gtts/ml? 20 gtt/ml? 30 gtt/ml? This information should be given to you in the question..

Next, you take your volume (in milliliters) and divide it by the time (in minutes).

Finally, youâ€™ll take that number and multiply it by that drop factor you were given (gtt/ml).

[Volume (ml) Ã· time (min)] x drop factor (gtt/min) = _____ gtt/min

Example 1:

You need to give 1000 ml of normal saline over 4 hours. The drop rate of your infusion set is 20 gtt/min. Whatâ€™s the drip rate?

Letâ€™s change our hours to minutesâ€¦ 4 x 60 = 240 minutes

(1000 ml Ã· 240 minutes) x 20 gtt/min = 83.3333â€¦

Letâ€™s round down for our final answer to be 83 gtt/min

Example 2:

You need to infuse 50 ml of an antibiotic over 1 hour. The drop rate of your infusion set is 15 gtt/min. Whatâ€™s your drip rate?

Letâ€™s change our hours to minutesâ€¦ 1 x 60 = 60 minutes

(50 ml Ã· 60 minutes) x 15 gtt/min = 12.499999â€¦

Letâ€™s round down for our final answer to be 12 gtt/min

Example 3:

You need to infuse 500 ml of Vancomycin over 3 hours. The drop rate of your infusion rate is 20 gtt/min.

Reference

[Agile Manufacturing: Strategies for adaptive, resilient and sustainable manufacturing]

[The Site Reliability Workbook: Practical Ways to Implement SRE]