

Calculation Worksheet #2 - Answers

1. The IV order is for D₅W to infuse at 100 mL/hr. The drop factor is 10 gtt/mL. How many drops per minute (gtt/min) should the pump be set to run? Round final answer to whole number. **17 gtt/min**

$$100/60 \times 10 = 16.666... = 17 \text{ gtt/min}$$

2. Medication order: rocephin 1 G IV every 12 hours over 30 minutes. Available: rocephin 1 G in 150 mL NS. At what rate would you set your pump? **300 mL/hr**

$$150 \text{ mL} \times 2 = 300 \text{ mL/hr}$$

There are two 30 mins intervals in 1 hour

You always have to have mL/hr and not minutes

3. Medication order: Vistaril 20 mg IM q4h PRN for nausea. The 10 mL vial that you have available is labeled 25 mg/mL. How many mL will you draw up to give? Do not round. **0.8 mL**

$$20 \text{ mg} / 25 \text{ mg} = 0.8 \text{ mL}$$

4. Medication order: Haldol 3 mg IM q6h PRN for agitation. The 1 mL vial that you have available is labeled 5 mg/mL. How many mL will you draw up to give? Do not round. **0.6 mL**

$$3 \text{ mg} / 5 \text{ mg} = 0.6 \text{ mL}$$

5. Medication order: heparin 5,000 units subQ every 12 hours. Drug available: heparin 10,000 units/2 mL. How many mL will you administer for the day? **2 mL**

$$5,000 / 10,000 \times 2 \text{ mL} = 1 \text{ mL} \times 2 = 2 \text{ mL}$$

6. A patient has an order for 200 mg q8h of cimetidine (Tagamet) to be administered intramuscularly. The vial of 8 mL contains 300 mg per 2 mL. How many mL would you give q8h? Round to the 10th. **1.3 mL**

$$200 \text{ mg}/300 \text{ mg} = 0.666 \dots \times 2 = 1.3 \text{ mL}$$

7. Medication order: Garamycin 80 mg IVPB over 30 minutes. Available: Garamycin (gentamicin sulfate) 80 mg in 50 mL of D₅W. Calculate the flow rate in mL/hr. **100 mL**

$$50 \text{ mL} \times 2 = 100 \text{ mL}$$

Same as #2

8. You have an IV infusing at 125 mL/hr. How long will it take 1,500 mL to infuse? **12 hrs**

$$1,500 \text{ mL} / 125 \text{ mL} = 12 \text{ hrs}$$

9. Medication order: cephtriaxone 2 g IV every 12 hours over 30 minutes. Available: cephtriaxone 2 g in 250 mL NS. At what rate would you set your pump? **500 mL/hr**

$$250 \text{ mL} \times 2 = 500 \text{ mL}$$

Same as #2 and 7

10. An infusion pump is set to administer 75 mL/hr to a patient. How many hours will it take for the patient to receive 600 mL of fluid? **8hrs**

$$600 \text{ mL} / 75 \text{ mL} = 8 \text{ hrs}$$

11. A patient is to receive lidocaine hydrochloride (Xylocaine) 100 mg as an intravenous bolus. The Xylocaine is labeled 20 mg/mL. How many milliliters should be administered? **5 mL**

$$100 \text{ mg} / 20 \text{ mg} = 5 \text{ mL}$$

12. Medication order: 50 mg/kg/day. Patient weight: 85.8 pounds. The patient will receive ____ mg/day. **1,950 mg**

$$85.8 / 2.2 = 39 \text{ kg}; 50 \text{ mg} \times 39 = 1,950 \text{ mg}$$

13. Medication order: Amoxicillin 2.5 mL every 8 hours. Available is Amoxicillin 250 mg/5 mL. The nurse will administer how many mg for the day? **375 mg**

$$2.5 \text{ mL} / 5 \text{ mL} = 0.5 \times 250 \text{ mg} = 125 \text{ mg} \times 3 = 375 \text{ mg}$$

14. Medication order: Ondansetron 2 mg – 4 mg/kg/Q 4 hours po PRN nausea. The patient weighs 66 lbs. What is the minimum amount of medication in grams that can be administered every 4 hours **0.06 gm**

$$66 / 2.2 = 30 \text{ lbs}; 2 \text{ mg} \times 30 = 60 \text{ mg} = 0.06 \text{ gm}$$

15. Medication order: 5 mL of normal saline is added to dilute the a vial of Lasix . The Lasix vial contains 20 mg/5 mL. How many milligrams of Lasix are in each milliliter of fluid? **2 mg**

$$5 + 5 = 10 \text{ mL}; 20 \text{ mg} / 10 \text{ mL} = 2 \text{ mg}$$

16. Medication order: administer 1,000 mL of normal saline IV over 6 hours.
At which rate should the nurse administer the medication via a pump?
Round answer a whole number. **167 mL/hr**

$$1,000 \text{ mL} / 6 \text{ hrs} = 166.666 \dots = 167 \text{ mL/hr}$$

17. Administer gentamicin 1 G/100 mL IVPB over 1 hr. At what rate should the nurse administer the medication per hour and minute? Round minute answer to the 10th. **100 mL/ 60 = 1.7 mL/min; 100/1 = 100 mL/hr**

$$100/1 = 100 \text{ mL/hr}; 100 \text{ mL} / 60 = 1.66666\dots = 1.7 \text{ mL/min}$$

18. Administer 1,000 mL D5W to at a rate of 125 mL/hour. How many hours will it take to infuse 1 L? **8 hrs**

$$1,000 \text{ mL} / 125 \text{ mL} = 8 \text{ hrs}$$

19. Administer heparin sodium 1,300 units/hour by IV. The pharmacy prepares the medication and delivers an IV bag 20,000 units/250 mL D5W. At what rate should the nurse administer the medication? Round to the 10th. **16.3 mL/hr**

$$1,300 \text{ u} / 20,000 \text{ u} = 0.065 \text{ u} \times 250 \text{ mL} = 16.25 = 16.3 \text{ mL/hr}$$

20. Administer D5 ½ at 100 mL/hour. The drop factor is 15 gtt/mL. How many drops per minute (gtt/min) should the pump be set to run? **25 gtt/min**

$$100 \text{ mL} / 60 \text{ minutes} \times 15 \text{ gtts} / 1 \text{ mL} = 25$$

21. Medication order: Administer an IV at 30mL/hour. The IVAC indicates that 270 mL are remaining in the present IV bag. The time is exactly 10:30 am. At what time will the infusion be completed? **1930**

$$270 @ 1030, 240 @ 1130 ---- 0 \text{ finished by } 1930$$

OR

$$270 / 30 = 9 \text{ hours}$$

Then add your 9 hours to the 10:30 time to get 1930

22. Administer Magnesium Sulfate 2 gm/ hour IV. Sent from the pharmacy is Magnesium Sulfate 40 gm/1,000mL. The nurse should set the pump at _____mL/hour. **50 mL/hr**

$$2 \text{ g} / 40 \text{ g} = 0.05 \times 1,000 \text{ mL} = 50 \text{ mL}$$

23. Administer Ritodrine IV 50 mcg/min. The pharmacy sent Ritodrine 150 mg premixed in 500 mL D5W. The nurse should set the IV pump at _____mL/hour. Round to final answer to 10th. **10 mL/hr**

$$0.05 \text{ mg} / 150 \text{ mg} \times 500 = 0.1666...7 \times 60 = 10 \text{ mL/hr}$$

24. Administer Keflex 2.0 g /100 mL in D5W in thirty minutes. The nurse should set the IV pump at _____mL/hour. **200 mL/hr**

$$100 \text{ mL} \times 2 = 200 \text{ mL/hr}$$

25. Administer 1.5 L Lactated Ringers in 12 hours. Calculate the rate of flow if the drop factor is 20 gtt/mL. Round final answer to a whole number. **42 gtt/min**

$$1,500 \text{ mL} / 720\text{min} = 2.08 \times 20 = 41.66... = 42 \text{ gtts/min}$$