Calculation Worksheet #2 - Answers

1. The IV order is for D_5W 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 x 10 = 16.666... = 17 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**

    150 mL x 2 = 300 mL/hr

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 mg /25 mg = 0.8 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 mg / 5 mg = 0.6 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 x 2 mL = 1 mL x 2 = 2 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 mg/300 mg = 0.666 … x 2 = 1.3 mL

7. Medication order: Garamycin 80 mg IVPB over 30 minutes. Available: Garamycin (gentamicin sulfate) 80 mg in 50 mL of D_5W. Calculate the flow rate in mL/hr. **100 mL**

    50 mL x 2 = 100 mL

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

    1,500 mL/ 125 mL = 12 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**

    250 mL x 2 = 500 mL

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 mL/ 75 mL = 8 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 mg / 20 mg = 5 mL

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

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

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 a vial of Lasix 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**

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

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

   100/1 = 100 mL/hr; 100 mL /60 = 1.66666... = 1.7 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 mL/125 mL = 8 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**

   1,300 u/20,000 u = 0.065 u x 250 mL = 16.25 = 16.3 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**

   100 mL/60 minutes × 15 gtts/1 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 finished by 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 g /40 g = 0.05 x 1,000 mL = 50 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. **10.2 mL/hr**

0.05 mg/150 mg x 500 = 0.17 x 60 = 10.2

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 mL x 2 = 200 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**

1,500 mL /60 min = 25 x 20 = 500 mL/12 = 41.66... = 42 gtts/min