Grin Nandmee

Calculation Worksheet #2

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.

$\frac{10\text{ gtt}}{1\text{ hr}} \times \frac{100\text{ mL}}{1\text{ hr}} \times \frac{1\text{ hr}}{60\text{ min}} = \frac{1{,}000}{60} =$ **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?

$\frac{150\text{ mL}}{30\text{ min}} =$ **5 mL/min**

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?

$\frac{20}{25} =$ **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?

$\frac{3}{5} =$ **0.6 mL**

5. Medication order: heparin 5000 units subQ every 12 hours. Drug available: heparin 10,000 units/2 mL. How many mL will you administer for the day?

$5{,}000 \times 2 = \frac{10{,}000}{10{,}000} = 1 \times 2 =$ **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?

$\frac{200}{300} \times 2 =$ **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.

$\frac{30\text{ min}}{60\text{ min}} = 0.5\text{ hr}$ $\frac{50\text{ mL}}{0.5\text{ hr}} =$ **100 mL/hr**

8. You have an IV infusing at 125 mL/hr. How long will it take 1500 mL to infuse? $\frac{1500}{125} =$ **12 hrs**

9. Medication order: rocephin g 1 IV every 12 hours over 30 minutes. Available: rocephin 1 g in 150 mL NS. At what rate would you set your pump?

$\frac{30\ min}{60\ min} = 0.5\ hr \quad \frac{150mL}{0.5hr} = 300\ mL/hr$

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?

$\frac{600}{75} = 8\ hrs$

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?

$\frac{100}{20} = 5mL$

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

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

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

$\frac{5mL}{2.5mL} = 2.5mL \quad \frac{250}{2} = 125mg/2.5mL \quad 125 \times 3 = 375mg$

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?

$\frac{66}{2.2} = 30kg \times 2mg = 60mg = 0.1g$

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 millimeter of fluid?

$20mg/10mL \quad \frac{20}{10} = 2mL$

16. Medication order: administer 1,000 mL of normal saline IV over 6 hours. At which rate should the nurse administer the medication?

$\frac{1,000\ mL}{6hr} = 167\ mL/hr$

17. Administer gentamicin 1 G/100 mL IVPB over 1 hr. At what rate should the nurse administer the medication?

$\frac{100\,mL}{1\,hr} = 100\,mL/hr$

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

$125\,mL = 0.125\,L$

$1{,}000\,mL = 1\,L$

$\frac{1{,}000}{125} = 8$ $\frac{1\,L}{0.125\,L} = 8\,hrs$

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?

$\frac{250\,mL}{1\,hr} = 250\,mL/hr$

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?

$\frac{15\,gtt}{1\,mL} \times \frac{100\,mL}{1\,hr} \times \frac{1\,hr}{60\,min} = \frac{1500}{60} = 25\,gtt/min$

21. Medication order: Administer an IV at 30 mL/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?

$\frac{270\,mL}{30\,mL} = 9\,hrs$ 1930 hrs

22. Administer Magnesium Sulfate 2 gm/ hour IV. Sent from the pharmacy is Magnesium Sulfate 40 gm/1000 mL. The nurse should set the pump at 50 mL/hour.

$\frac{2\,gm}{40\,gm} \times 1000 = 50\,mL/hr$

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 1,500 mL/hour.

$\frac{1\,mg}{1000\,mcg} \times \frac{50\,mcg}{1\,min} \times \frac{60\,min}{1\,hr} \times \frac{500\,mL}{1} = \frac{1{,}500{,}000}{1{,}000} = 1{,}500$

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

$\frac{100}{.5} = 200$

25. Administer 1.5 L Lactated Ringers in 12 hours. Calculate the rate of flow if the drop factor is 20 gtt/mL.

$12 \times 60 = 720\,min$

$1.5\,L = 1{,}500\,mL$

$\frac{1{,}500\,mL}{720} \times 20\,gtt/mL = 42\,gtt/min$