Alexi Virgil

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.

$Y = \frac{100\,mL}{60\,min} \times 1.7\,(10\,gtt/min) =$ 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?

$Y = \frac{1g}{1g}\,(150mL) = 150mL/30min$

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?

$D = \frac{20mg\,(1mL)}{25mg} =$ 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?

$D = \frac{3mg\,(1mL)}{5mg} =$ 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?

$D = \frac{5000\,units\,(2mL)}{10{,}000\,units} =$ 1 mL/dose, 2 mL/day

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?

$D = \frac{200mg\,(2mL)}{300mg} =$ 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.

$Y = \frac{80mg}{80mg}\,(50mL) = 50mL/30min$

$= 100mL/hr$

8. You have an IV infusing at 125 mL/hr. How long will it take 1500 mL to infuse?

$\frac{125mL}{1hr} = \frac{1500mL}{x}$ $\quad \frac{125x}{125} = \frac{1500mL}{125}$ $=$ 12 hours

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?

$Y = \frac{1g}{1g} \times 150mL = 150mL(2) =$ 300mL/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?

$\frac{75mL}{1hr} = \frac{600mL}{x} \quad \frac{75x}{75} = \frac{600mL}{75} =$ 8 hours

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?

$D = \frac{100mg(1mL)}{20mg} =$ 5mL

12. Medication order: 50 mg/kg/day. Patient weight: 85.8 pounds. The patient will receive 1950 mg/day.

85.8 ÷ 2.2 = 39 kg

50mg(39kg) = 1950mg/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?

$D = \frac{2.5mL(250mg)}{5mL} = 125mg$ (3 doses) = 375mg/day

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?

66 ÷ 2.2 = 30kg

2mg(30kg) = 60mg

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?

5mL + 5mL = 10mL

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

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

$Y = \frac{1000mL}{6hr} =$ 167mL/hour

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

100mL/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?

$\frac{1000mL}{125mL}$ = 8 hours

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?

D= $\frac{1300 \text{ units}(250mL)}{20,000 \text{ units}}$ = 16.3 units/hour

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?

Y= $\frac{100mL}{60min} \times 15 gtt/mL$ = 25 gtt/mL

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?

$\frac{270mL}{30mL}$ = 9 hours Complete at 1930

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 _____mL/hour.

$\frac{2gm(1000mL)}{40gm}$ = 50mL/hour

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.

50mcg/min (60) = $\frac{3000mcg/hr}{300mcg/mL}$

$\frac{150mg}{1mg} \mid \frac{1000mcg}{1}$

~~150,000mcg/500~~

300mcg/1mL

10mL/hr

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

100mL(2) = 200mL/hour

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

12 hours = 720min

$\frac{1.5L}{1L} \mid \frac{1000mL}{1}$ = $\frac{1500mL}{720min}$ = 2.08 X 20 gtt/mL = 41.7 gtt/min