**Review of Math Calculations**

**Answers**

Systems Conversion Worksheet - **Answers**

Convert each of the given quantities to the equivalent unit indicated.

**Leading zeros** (0.25) are required

**Trailing zeros** (2.0) are incorrect

1. 1.5 g = \_\_\_1500\_\_\_\_ mg

2. 1.5 mg = \_\_1500\_\_\_\_ mcg

3. 3500 g=\_\_\_3.5\_\_\_\_ kg

4. 125 mg = \_\_\_0.125\_\_ g

5. 250 mcg = \_\_0.25\_\_\_\_ mg

6. 1.5 L = \_\_\_1500\_\_\_\_ ml

7. 15 cm = \_\_\_\_5.9\_\_\_\_\_ in

8. 50 inches = \_\_127\_\_\_\_\_ cm

9. 30 kg = \_\_\_\_66\_\_\_\_ lbs

10. 15 t = \_\_\_\_75\_\_\_\_ mL

11. 10 in = \_\_\_25.4\_\_\_\_\_ cm

12. 0.4 g = \_\_\_400\_\_\_\_ mg

13. 220 lb = \_\_\_100\_\_\_\_ kg

14. 5.3kg = \_\_5300\_\_\_\_ g

15. 3500 g = \_\_\_3.5\_\_\_\_\_\_\_ kg

16. 2 L = \_2000\_\_\_\_\_ mL

17. 32 mcg = \_0.032\_\_\_\_ mg

18. 24 in = \_\_\_61\_\_\_\_\_ cm

19. 56 mcg = \_0.056\_\_ mg

20. A patient’s lunch consisted of the following fluids:

6 ounces of soup

 360 mL of water

8 ounces of milk

6 ounces of gelatin

4 ounces of juice

 120 mL of orange juice

Calculate the patient’s total fluid intake in ounces and mL.

\_\_\_\_\_40 oz \_\_\_1200\_\_ mL

Oral Medications

1. Order: Mirapex (pramipexole) 0.125 mg p.o. b.i.d.

Available: Mirapex 0.25 mg scored tablets.

How many tablet(s) should you administer? \_\_\_\_\_\_1/2 tab\_\_\_\_\_\_\_\_\_\_\_

1. Order: Cytotec (misoprostol) 800 mcg p.o. to be given in 4 equally divided doses tid and hs.

Available: Cytotec 200 mcg tablets.

How many tablets should you administer each dose? \_\_\_\_\_\_1 tab\_\_\_\_\_\_\_\_\_\_\_\_

1. Order: Oramorph SR (morphine sulfate) 15 mg po q 4 h prn pain. The patient received the last dose at 1500. At what time could the patient receive the medication again? \_\_\_\_1900\_\_\_\_\_\_\_
2. Order Altace (ramipril) 5 mg po b.i.d.

Available: Altace in the figure below.

How many capsules should you administer? \_\_\_\_\_\_\_\_\_\_2 cap\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



1. Order Augmentin (amoxicillin/clavulanate) 800 mg oral suspension q 12h p.o.

Available: Augmentin in figure below:

Indicate on the medication cup the volume you should administer.



**←**20 mL

Parenteral Medications

1. Order: Loxitan (loxapine hydrochloride) 30 mg IM q4h prn.

Available: 10 mL vial containing Loxitan 50 mg/mL.

How many mL should you administer? \_\_\_\_\_\_\_0.6 mL\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Order: Procainamide hydrochloride 500 mg IM now.

Available: Procainamide vial 1 g/2mL.

How many mL should you administer? \_\_\_\_\_1 mL\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Order: Valium (diazepam) 2.5 mg q 3h prn.

Available: Valium 2 mL vial containing 10 mg.

How many mL should you administer: \_\_\_\_\_\_\_\_\_\_\_0.5 mL\_\_\_\_\_\_\_\_\_\_\_\_

The patient received Valium at 0300; when can the patient again receive the medication?

 \_\_\_\_\_\_\_\_\_\_0600\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Order: Cyanocobalamin 1000 mcg IM today. Available is a multidose vial containing cyanocobalamin 10 mg/10 mL.

Mark the syringe to indicate the dose to be administered.



 **↑ 1 mL**

1. Order: Lovenox (enoxaparin sodium) 1 mg/kg subcut q 12h for a patient weighing 176 lbs.

 Pt’s weight = 80 kg

What is the ordered dose q 12h? \_\_\_\_\_\_\_\_\_80 mg q 12h\_\_\_

1. Order: gentamicin 100 mg IV q 8h for a patient who weighs 220 lbs

The recommended adult dosage is 1 mg - 1.7 mg/kg/dose to be given q 8h.

 Available: Gentamicin 80 mg/2 mL

Pt’s weight = 100 kg

Calculate the dose range: \_\_\_\_\_100 mg to 170 mg

Is this a safe dose? (Yes or No) \_\_\_\_Yes\_\_\_\_\_\_\_\_\_\_

If this dosage is safe, how many mL will you administer? \_\_\_\_\_\_2.5 mL\_\_\_\_\_\_

1. Order: Rocephin (sterile ceftriaxone sodium) 750 mg IM daily.

 Available: A 1 g vial when reconstituted with 2.1 mL diluent yields a concentration of 350

 mg/mL,

How many mL would you administer? \_\_\_\_\_2.1 mL\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Order: Erythromycin 750 mg IV every 6 hours.

 Available: Erythromycin 1-g vial: reconstitute with 20 mL of sterile water for 1000 mg/20 mL

How many mL would you administer after reconstitution? \_\_\_\_\_\_15 mL\_\_\_\_\_\_\_\_\_

1. Order: Fortaz 1.25 g IV every 12 h

Available: Fortaz 2 g vial; dilute each 1 g with 10 mL sterile water for final concentration of 100 mg/mL.

 How many mL will you draw from the vial after reconstitution? \_\_\_12.5 mL\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Order: Vancomycin 275 mg IV every 8 h

 Available: Vancomycin 500 mg vial; reconstitute each 500 mg vial with 10 mL NS for

 final concentration of 50 mg/mL.

 How many mL will you draw from the vial after reconstitution? \_\_\_\_5.5 mL\_\_\_\_\_\_\_\_\_\_

Concentration problems

1. Heparin sodium 25,000 units in 250 ml D5W. What is the concentration?

**25,000 units =100 units/mL**

1. **mL**
2. Doctor's order: Regular insulin 50 units in 250 mL NS. What is the concentration?

 **50 units = 0.2 units/mL**

**250 mL**

IV Practice Problems GTT/MIN

1. Order: 1000 mL D5W to run over 8 hours. The administration set is 15 gtt/mL. What is the flow rate? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 1000 mL x 15 gtt/mL = 31.25 = 31 gtt/min

 8 h x 60 min/h

1. Order: 1000 mL 0.9% Normal Saline to run over 6 hours. The administration set is 20 gtt/mL. What is the flow rate? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 1000 mL x 20 gtt/mL = 55.55 = 56 gttmin

 6 h x 60 min/h

1. Order: The following IVs are to be infused over the next 18 hours. The administration set is 15 gtt/mL. Calculate the flow rate for each of the IVs.

#1 1000 mL D5W to run over 10 hours \_\_\_\_\_\_\_25 gtt/min \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

#2 500 mL NS to run over 4 hours \_\_\_\_\_\_\_\_\_\_\_31.25 = 31 gttmin\_

#3 250 mL LR to run over 4 hours \_\_\_\_\_\_\_\_\_\_\_15.625 = 16 gtt/min \_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. The patient is to receive a transfusion of 1 unit of packed RBCs. The unit contains 250 mL and should infuse over 2 hours. The blood administration set is 10 gtt/mL.

What is the flow rate? \_\_\_\_\_\_\_\_\_\_\_\_\_ gtt/min

250 mL x 10 gtt/mL = 20.83 = 21 gtt/min

 2h x 60 min/h

1. Order: 1000 mL D5LR to run over 9 hours. The administration set is 10 gtt/mL.

What is the flow rate? \_\_\_\_19 gtt/min \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Order: Kefzol (cefazolin sodium) 1 g q8h IV piggyback mixed in 100 mL NS to infuse over 1 h. The administration set is 15 gtt/mL.

What is the flow rate? \_\_\_25 gtt/min \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

IV Practice Problems ML/HR

1. Order: 1 g of ampicillin in 50 mL of D5W q 6h to infuse in 30 minutes.

What is the flow rate? \_\_\_\_\_\_\_100 mL/h\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Order: Garamycin (gentamicin sulfate) 60 mg IVPB q8h to be added to 100 mL NS and to infuse over 1 h via infusion pump. Available: Garamycin 80 mg/2mL.

How many mL will you draw up? \_\_\_\_\_\_\_\_1.5 mL\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

You add the Garamycin to 100 mL NS to infuse over 1 h.

What rate do you set the infusion pump? \_\_\_\_\_100 mL/h\_\_\_\_\_\_\_\_\_\_\_\_\_

1. 1200 mL D5W IV to infuse in 10 hours by infusion pump

Flow rate: \_\_120\_\_\_\_\_\_\_ mL/h

1. 2 L D5W IV to infuse in 24 hours by infusion pump

 Flow rate: 83.33 = 83 mL/h

1. 1.5 L D5 NS IV to infusion 20 hours by controller

 Flow rate: \_\_\_75\_\_\_\_\_ mL/h

1. 30 mL D5W with antibiotic IV to infuse in 20 minutes by infusion pump

 Flow rate: \_\_\_\_90\_\_\_\_ mL/h

1. Calculate the IV flow rate for 250 mL to infuse by infusion pump over two hours

 Flow rate: \_\_\_\_125\_\_\_\_\_\_\_ mL/h

**ANSWERS** Heparin & Insulin (All medications on are an infusion pump)

1. Doctor's order: Heparin 1200 units/hr

Available: Heparin 50,000 units in 500 mL NS

The IV flow rate is: \_\_\_**12 mL/h**

2. Doctor's order: Heparin 1800 units/hr

Available: Heparin 25,000 units in 500 mL NS

The IV flow rate is: \_**36 mL/h** \_\_\_\_\_\_\_

3. Doctor's order: Heparin 25,000 units in 500 mL NS to run at 1700 units/hr

The IV flow rate is: \_**34 mL/h**

4. Doctor's order: Heparin 900 units/hr

Available: Heparin 50,000 units in 500 mL D5W

The IV flow rate is: \_**9 mL/h**

5. Doctor's order: Heparin 25,000 units in 500 mL D5W to run at 1400 units/hr

The IV flow rate is: \_**28 mL/h**

6. Doctor's order: Regular insulin 7 units/hr IV

Available: Regular insulin 50 units in 250 mL NS

The IV flow rate to deliver this dosage is: \_**35 mL/h**

7. Doctor's order: Regular insulin 100 units in 100 mL NS to infuse on a pump at 18 units/hr IV

The IV flow rate to deliver this dosage is: \_**18 mL/h**

8. Doctor's order: Regular insulin 12 units/hr IV

Available: Regular insulin 50 units in 100 mL NS

The IV flow rate to deliver this dosage is: \_**24 mL/h**\_\_\_\_\_\_\_\_\_\_\_\_

9. Doctor's order: Regular insulin 2 units/hr IV. Available supply is Regular insulin 50 units in 250 mL NS

The IV flow rate to deliver this dosage is: \_**10 mL/h**\_\_\_

10. Doctor's order: Regular insulin 10 units/hr IV

Available: Regular insulin 50 units in 500 mL NS

The IV flow rate to deliver this dosage is: \_\_**100 mL/h**

**Pediatric calculations**

**Calculate the child’s weight in kilograms, determine the safe recommended dosage or range, determine the safety of the order, and calculate the drug dose.**

1. Order: Maintenance dose of Digoxin elixir 0.075 mg q 12h po for a 33 lb, 18-month-old child.

 Manufacturer’s recommendation for maintenance dose: children under 2 years of age is 0.01-0.02 mg/kg daily in divided doses q 12h.

 Available: Digoxin elixir 0.05 mg/mL.

Is the order safe: \_\_\_\_\_\_Yes\_\_\_\_\_

If safe, administer \_\_\_\_\_1.5\_\_\_\_\_\_mL

15 kg range: 0.15-0.3 mg/day, 0.075-0.15 mg/dose

2. Order: Lasix 20 mg IM stat for a 7-year-old weighing 44 lbs.

 Manufacturer’s recommended initial dose for Lasix is 1-2 mg/kg

 Available: Lasix 40 mg/mL

Is the order safe: \_\_\_Yes\_\_\_\_\_\_\_\_\_\_

If safe, administer \_\_\_0.5\_\_\_\_\_\_\_mL

20 kg range: 20-40 mg/dose

3. Order: Gentamycin 6 mg/kg/day in three divided doses IM for an 18-month-old who weighs 24 lb.

 Manufacturer’s recommended dosage: 2-2.5 mg/kg q 8h.

 Available: Gentamycin multi-dose vial 40 mg/mL

Is the order safe: \_\_\_\_Yes\_\_\_\_\_\_\_\_

If safe, administer \_\_\_\_0.55\_\_\_mL

10.9 kg range: 21.8- 27.3 6 mg x 10.9 = 65.4 ÷ 3 = 21.8 mg/dose

4. Order: Ancef 30 mg/kg/day in 3 divided doses IM for a 9-month-old who weighs 32 lb.

 Manufacturer’s recommended dosage: 25-50 mg/kg/day in 3 divided doses

 Available: Ancef 500 mg: to reconstitute, dilute with 2 mL of sterile water to yield a volume of 2.2 mL.

Is the order safe: \_\_\_\_\_Yes\_\_\_\_\_\_\_

If safe, administer \_\_\_\_0.64\_\_\_\_\_\_\_\_\_\_mL

14.5 kg range: 362.5-725 mg/day; 120.8-241.7 mg/dose; Ordered: 30 mg x 14.5 = 435 ÷ 3 = 145 mg/dose

145 mg x 2.2 mL = 0.64 mL

500 mg

5. Order: Vistaril 0.5 mg/lb IM stat for a10-year-old who weighs 35 kg

 Manufacturer’s recommended dosage: 0.5 mg/lb/dose

 Available: Vistaril muti-dose vial 25 mg/mL

Is the order safe: \_\_\_Yes\_\_\_\_\_\_\_\_\_

If safe, administer \_\_\_1.5\_\_\_\_\_\_\_\_\_\_\_mL

35 kg = 77 lb 0.5 x 77 = 38.5 mg

6. Order: Inderal 25 mg po bid for a 13-year-old weighing 99 lb

 Manufacturer’s recommended pediatric dose is 0.5 mg/kg bid

 Available: Inderal 10 mg/tab

Is the order safe: \_\_\_\_No\_\_\_\_\_\_\_\_

If safe, administer \_\_\_\_\_\_\_\_\_\_\_\_\_\_tab(s)

45 kg 0.5 x 45 = 22.5 mg/dose

7. Order: Amikacin 300 mg IM q 12h for an 11-year-old weighing 83 lb

 Manufacturer’s recommended dosage: 7.5 mg/kg bid

 Available: Amikacin single dose injectable 500 mg/2 mL

Is the order safe: \_\_\_\_\_No – too high\_\_\_\_\_\_\_

If safe, administer \_\_\_\_\_\_\_\_\_\_\_\_\_\_mL

37.7 kg 7.5 x 37.7 = 282.8/dose

8. Order: Clindamycin 15 mg po q 8h for a 12-month-old who weighs 19 lb

 Manufacturer’s recommended dosage: 2-2.5 mg/kg/day in 3-4 divided doses.

 Available: Clindamycin oral solution 10 mg/5 mL

Is the order safe: \_\_\_\_\_no – too high\_\_\_\_\_\_\_

If safe, administer \_\_\_\_\_\_\_\_\_\_\_\_\_\_mL

8.6 kg; range 17.2-21.5 mg/day, 5.7-7.2 mg/dose

9. Order: Lanoxin pediatric elixir 120 mcg po q 8h for a 1-year-old who weighs 22 lb

 Manufacturer’s recommended loading dose is 35-60 mcg/kg/day in 3 divided doses

 Available: Lanoxin pediatric elixir 0.05 mg/mL

Is the order safe: \_\_\_Yes\_\_\_\_\_\_\_\_\_

If safe, administer \_\_\_\_2.4\_\_\_\_\_\_\_\_\_\_mL

10 kg range – 350 mcg-600 mcg/day; 116.7-200 mcg/dose

0.05 mg = 50 mcg/mL

10. Order: Demerol 1mg/kg IM stat. Child’s weight is 33 pounds.

 Manufacturer’s recommended dose: 1 mg/kg

 Available is Demerol 25 mg/mL.

Is the order safe: \_\_\_Yes\_\_\_\_\_\_\_\_\_

If safe, administer \_\_\_0.6\_\_\_\_\_\_\_\_\_\_\_mL

15 kg; 1 x 15 = 15 mg

11. The physician orders Keflex 250 mg q.i.d. for a child weighing 50 lb. You have Keflex 250-mg capsules. The recommended daily po dosage for a child is 25 to 50 mg/kg/day in divided doses q 6 h.

Is the order safe: \_\_\_\_Yes\_\_\_\_\_\_\_\_

If safe, administer \_\_\_\_\_\_1\_\_\_\_\_\_\_\_caps

22.7 kg; range 567.5 – 1135 mg/24h

12. The physician orders Benadryl 25 mg IV q6 h for a child weighing 50 lb. You have available Benadryl 12.5 mg/mL. The recommended daily dosage for a child weighing more than 12 kg is 5 mg- 7 mg/kg/24 h in four divided doses.

Is the order safe: \_\_\_No – too low\_\_\_\_\_\_\_\_\_

If safe, administer \_\_\_\_\_\_\_\_\_\_\_\_\_\_mL

22.7 kg; 113.5 mg-158.9 mg/day; 28.4 – 39.7 mg/dose

13. The physician orders Dilantin 60 mg po q12 h for a child weighing 40 lb. You have Dilantin 30-mg chewable tablets available. The recommended oral dosage for a child is 5 to 7 mg/kg/24 h in divided doses q 12h.

Is the order safe: \_\_Yes\_\_\_\_\_\_\_\_\_\_

If safe, administer \_\_\_\_\_2\_\_\_\_\_\_\_\_\_tabs

18.2 kg; range 91 – 127.4 mg/24h; 45.5 – 63.7 mg/dose

14. Order: Dilantin 8 mg/kg/day p. o. divided into 2 doses. The manufacturer’s recommended dose is 8-10 mg/kg/day divided equally in 2 doses. The infant’s weight is 9 lbs 4 oz. Available is Dilantin Suspension 30 mg/5 mL.

Is the order safe: \_\_\_Yes\_\_\_\_\_\_\_\_\_

If safe, administer \_\_\_2.8\_\_\_\_\_\_\_\_\_\_\_mL

4.2 kg; order: 8 mg x 4.2kg = 33.63 mg/day, 16.8 mg/dose

Recommended: order is in same range

15. Order: Morphine sulfate 1 mg/kg/dose IV. Child weighs 40 lbs. Available is Morphine sulfate 10 mg/mL. Manufacturer’s recommended dose is 1 mg/kg/dose.

Is the order safe: \_\_\_\_\_yes\_\_\_\_\_\_\_

If safe, administer \_\_\_\_1.8\_\_\_\_\_\_\_\_\_\_mL

18.2 kg;

16. Order: Phenobarbital 100 mg po q 12 h. The recommended maintenance dose is 3-5 mg/kg/day. The child weighs 30 kg. Available is Phenobarbital 50 mg/5 mL

Is the order safe: \_\_\_\_No-too high\_\_\_\_\_\_\_\_

If safe, administer \_\_\_\_\_\_\_\_\_\_\_\_\_\_mL

range 90 – 150 mg/day; 45-75 mg/dose

17. The recommended dose of Calcijex for IV use in children is 0.05 mcg/kg/day. Available is Calcijex single dose ampule with 2 mcg/mL. If 1.25 mcg IV is ordered, how much would you give a child weighing 55 lb?

Is the order safe: \_\_\_Yes\_\_\_\_\_\_\_\_\_

If safe, administer \_\_\_\_\_0.63\_\_\_\_\_\_\_\_\_mL

25 kg; 0.05 x 25 = 1.25 mcg

18. Order: Sandostatin 80 mcg subcut q 12h for a child weighing 18 lb. The manufacturer’s recommended dose is 1-10 mcg/kg/day in 2 equally divided doses.

On hand is: Sandosatatin 100 mcg/mL

Is the order safe: \_\_\_\_No\_\_\_\_\_\_\_\_

If safe, administer \_\_\_\_\_\_\_\_\_\_\_\_\_\_mL

8.2 kg; range 8.2 – 82 mcg/day; 4.2-41 mcg/dose

19. Order: Prilosec 4.8 mg po qid for a child weighing 42 lb

 Manufacturer’s recommended minimum dosage is 0.7 mg/kg/dose orally qid

 Available: Prilosec 3 mg/mL

Is the order safe: \_\_\_\_No- too low\_\_\_\_\_\_\_\_

If safe, administer \_\_\_\_\_\_\_\_\_\_\_\_\_\_mL

19.1 kg; 0.7 x 19.1 = 13.37 mg/dose

Multiple problem questions

1. Order: Clindamycin 500 mg IVPB q 12 hours.

Available: A 1 gram vial that reads: “Add 3.5 mL of NS to provide a final concentration of 1 g/4 mL”.

The manufacturer’s instructions for IVPB administration suggests adding the Clindamycin to 250 mL NS to be administered over 2 hours.

How many mL Clindamycin would you add to the bag of NS? **2 mL**

1. Based on the previous question:

What is the flow rate you would set the infusion pump? **125 mL/hr**

1. Order: Regular insulin 3 units/hr IV

Available: Regular insulin 300 units in 200 mL NS

What is the concentration of the insulin drip? **1.5 units/mL**

1. Based on the previous question:

What is the flow rate you would set on the infusion pump? **2 mL/hr**

**NOTE: These problems will not be on a preclinical math test.**

**However, they may be on a theory exam.**

**Practice Problems Critical Care**

For the following:

Calculate Weight in kilograms (round to the tenths)

Find the Concentration

Infusion rates:

 Volume per min (<1 round to hundredths, >1 round to tenths)

Volume per hour (round to tenths)

1. Infuse dobutamine 500 mg in 250 mL D5W at 5 mcg/kg/min. Patient weighs 182.6 lb.

500 mg = 500,000 mcg/250 mL = **2000 mcg/mL**

 **83** kg x 5 mcg/kg/min = 415 mcg/min

415 mcg/min = 0.207 = **0.21 mL/min**

2000 mcg/mL

0.21 mL/min x 60 min/hr = **12.6 mL/h**

2. Infuse amrinone 250 mg in 250 mL NS at 5 mcg/kg/min. Patient weighs 165 lbs

**1000 mcg/mL**

**75 kg** x 5 mcg/kg/min = 375 mcg/min

0.375 = **0.38 mL/min**

**22.8 mL/h**

3. Infuse dopamine 400 mg in 250 mL D5W at 10 mcg/kg/min. Patient weighs 140.8 lb

1600 mcg/mL

**64 kg** x 10 mcg/kg/min = 640 mcg/min

**0.4 mL/min**

**24 mL/h**

4. Infuse nitroprusside 100 mg in 500 mL D5W at 3 mcg/kg/min. Patient weighs 55 kg

**55 kg** x 3 mcg/kg/min = 165 mcg/min

0.825 = **0.83 mL/min**

**49.8 mL/h**

5. Infuse dobutamine 1000 mg in 500 mL D5W at 15 mcg/kg/min. Patient weighs 110 lb

**50 kg** x 15 mcg/kg/min = 750 mcg/min

0.375 = **0.38 mL/min**

**22.8 mL/h**

6. Infuse propofol (Diprivan) 500 mg/50 mL at 10 mcg/kg/min. Patient weighs 187 lb

10 mg/mL or 10,000 mcg/mL

**85 kg** x 10 mcg/kg/min = 850 mcg/min

0.085 = **0.09 mL/min**

**5.4 mL/h**

7. Infuse alfentanil (Alfenta) 10,000 mcg in D5W 250 mL at 0.5 mcg/kg/min. Patient weighs 176 lb

40 mcg/mL

**80 kg** x 0.5 mcg/kg/min = 40mcg/min

**1 mL/min**

**60 mL/h**

8. Infuse milrinone (Primacor) 20 mg in D5W 100 mL at 0.375 mcg/kg/min. Patient weighs 160.6 lb.

200 mcg/mL

**73 kg** x 0.375 mcg/kg/min = 27.4 mcg/min

**0.14 mL/min**

**8.4 mL/h**

9. Infuse esmolol 2.5 g in NS 250 mL at 150 mcg/kg/min. Patient weighs 149.6 lb

10 mg/mL

**68 kg** x 150 mcg/kg/min = 10,200 mcg/min or 10.2 mg/min

**1 mL/min**

**60 mL/h**

10. Infuse theophylline 400 mg in D5W 500 mL at 0.55 mg/kg/hr. Patient weighs 70 kg. Hourly rate only

0.8 mg/mL

**70 kg** x 0.55 mg/kg/hr = 38.5 mg/h

48.125 = **48.1 mL/h**

Calculation of seconds per line for IV push

1. The order reads, furosemide 40 mg IV Push, once. The vial contains furosemide 40mg in 4 mL. It is to be given over 2 minutes.

Using the syringe below, calculate the number of lines per second. **1 line every 6 seconds**



1. The order reads, metoprolol 2.5 mg IV Push q 6 hours prn SBP>165. The vial contains metoprolol 5 mg in 5 mL. It is to be given over 5 minutes.

How many mL will be administered? **2.5 mL**

Using the syringe below, calculate the number of lines per second. **1 line every 12 seconds**



1. The order reads, diltiazem 0.25mg/kg IV Push Now. The patient weighs 60 kg. The vial contains diltiazem 25mg in 5 mL. It is to be given over 3 minutes.

How many mg will the patient receive? **15 mg**

How many mL will be administered? **3 mL**

Using the syringe below, calculate the number of lines per second. **1 line every 6 seconds**

