Additional Math Practice 1

1. A patient is to receive dobutamine at a rate of 10 mL/hr. The drug is labeled 250 mg/250 mL. The patient weighs 82 kg. How many mcg/kg/min are infusing?

   250/250 = 1 x 1000 = 1000 mcg

   $\frac{1000 \times 10}{82 \times 60} = \frac{10{,}000}{4920} =$ 2 mcg/kg/min

2. If norepinephrine is infusing at 13 mL/hr, what would the nurse expect the dose to be in mcg/min? The bag is labeled norepinephrine 4 mg/250 mL. The patient weighs 94 kg. Round to the nearest tenth.

   4/250 = 0.016 x 1000 = 16 mcg

   $\frac{13 \times 16}{60} = 3.46 =$ 3.5 mcg/min

3. A patient's blood pressure has decreased to 70/48 mmHg following a significant head injury. The primary healthcare provider writes an order to start a Dopamine infusion at 10 mcg/kg/min. Pharmacy sends a bag labeled Dopamine 400 mg/250 mL. The patient weighs 68 kg. What rate will the pump need to be set on to achieve the desired dose?

   400/250 = 1.6 x 1000 = 1600 mcg

   $\frac{68 \times 10 \times 60}{1600} = \frac{40800}{1600} =$ 25.5 mL/hr

4. The nurse receives an order to titrate propofol for sedation. The patient is currently receiving 8 mcg/kg/min. Determine the rate that is currently infusing in mL/hr. The bottled is labeled propofol 1 GM/100mL. The patient weighs 90 kg.

   1000/100 = 10 x 1000 = 10,000 mcg

   $\frac{90 \times 8 \times 60}{10{,}000} = \frac{43200}{10{,}000} =$ 4.3 mL/hr

5. The nurse receives an order to initiate a Cordarone infusion at 0.5 mg/min. The drug is labeled 450 mg/250mL. How many mL/hr should the pump be set on to deliver the correct dose?

   450/250 = 1.8

   $\frac{0.5 \times 60}{1.8} = 16.67 =$ 16.7 mL/hr

6. Nicardipine is to be given at a rate of 5 mg/hr. The drug is supplied as 50 mg/250 mL. How many mL/hr should the pump be set on to deliver the correct dose?

$$\frac{5mg \mid 250mL}{50mg} = 25mL/hr$$

7. Heparin is ordered at 800 units/hr. The drug is supplied as 25000 units/500 mL. What rate should the pump be set at?

$$\frac{800u \mid 500mL}{25000u} = 16mL/hr$$

8. The patient is to receive 10 mcg/min of norepinephrine. The drug is supplied as 16 mg/250 mL. The patient weighs 83 kg. How many mL/hr will you place the pump on?

16/250 = 0.064 x 1000 = 64mcg

$$\frac{10 \times 60}{64} = 9.37 = 9.4mL/hr$$

9. The patient is to receive Rocephin 1 GM over 90 minutes. The drug is supplied as 1 GM/100 mL. The drop factor is 20. How many gtt/min should be delivered?

$$\frac{100 \times 20}{90} = 22gtt/min$$

10. The patient is to receive Cipro 400 mg IV over 1 hour. The bag of Cipro comes from the pharmacy labeled Cipro 400 mg in 100 mL D5W. The IV tubing delivers 12 gtt/mL. How many drops per minute (gtt/mL) will you deliver?

$$\frac{100 \times 12}{60} = 20gtt/min$$

11. The patient is on a dopamine drip infusing at 35 mL/hr. The label reads 400 mg Dopamine is 500 mL D5W. The client weights 62 kg. How many mcg/kg/min is the client receiving? Round to the nearest tenth.

400/500 = 0.8 x 1000 = 800mcg

$$\frac{35 \times 800}{62 \times 60} = \frac{28000}{3720} = 7.5mcg/kg/min$$

12. The nurse receives an order to infuse Nitroglycerin at 60 mcg/min. It is supplied as 25 mg in 250 mL of normal saline. What rate (mL/hr) would the rate need to be set at?

25/250 = 0.1 x 1000 = 100mcg

$$\frac{60 \times 60}{100} = 36\text{mL/hr}$$

13. The patient is on an insulin drip. The current dose is 6 units/hr. The pharmacy sends a bag with 50 units regular insulin in 100 mL normal saline. At what rate (mL/hr) would you set the IV pump?

$$\frac{6u}{50u} \Big| \frac{100mL}{} = 12\text{mL/hr}$$

14. The patient is to receive 3 units of blood over 5 hours. Each unit contains 250 mL or blood. How many drops per minute (gtt/min) is needed to give the blood over the required time? The IV tubing drop factor is 20 gtt/mL.

250 x 3 = 750

$$\frac{750 \times 20}{300} = 50\text{gtt/}$$

Math Practice 2

1. The order is to infuse Cordarone 0.5 mg/min. Supplied is 450 mg/250 mL. What rate would you place on the pump? Round to the nearest tenth.

2. The order is for Cordarone 16.7 mL/hr. Supplied is 450mg/250mL. How many mg/min are infusing?

3. Dobutamine is infusing at 15 mL/hr. The client weighs 203 lbs. The concentration is 500mg/250mL. Calculate the dose in mcg/kg/min.

4. Heparin is ordered at 1200 units/hr. The drug is supplied as 25000 units/500mL. What rate should be placed on the pump?

5. The client is receiving Levophed 10 mcg/min. The client weighs 83 kg. The drug is supplied as 8mg/250mL. Calculate the appropriate rate for the pump. Round to the nearest whole number.

6. Infuse propofol at 17 mL/hr. The drug is supplied as 1 GM/100mL. The client weighs 80 kg. Calculate the dose in mcg/kg/min. Round to the nearest tenth.

7. The client is on an Insulin drip. The current dose is 8 units/hr. The bag is labeled 50 units/100 mL. What rate should you set on the pump to achieve the appropriate dose?

8. Heparin is infusing at 10 mL/hr. The bag is labeled 25,000 units/500 mL. How many unit/hr are infusing?

9. Lidocaine 2 GM/500mL is infusing at 30 mL/hr. How many mg/min are infusing?

10. The order is to infuse Fentanyl 100 mcg/hr. The bag is labeled 1 mg/250mL. How many mL/hr should you infuse?

11. Labetalol is infusing at 30 mL/hr. The bag is labeled 100mg/100mL. How many mg/min is infusing?

12. Heparin is infusing at 24 mL/hr. The bag is labeled 25,000 units/500mL. How many units/hr are infusing?

Math Practice 3

1. The patient is on an Insulin drip infusing at 5 units/hr. The bag is labeled 100 units insulin in 250 ml normal saline. At what rate should the pump be set?

2. Heparin is ordered to be given at 800 units/hr. The drug is supplied as 25000 units/500ml. At what rate should the pumped be set?

3. The patient is receiving norepinephrine (Levophed) at 23 ml/hr to maintain a mean arterial pressure greater than 90. The drug is supplied as 4 mg/250ml. The patient weighs 87kg. How many mcg/min are infusing?

4. The patient is to receive ceftriaxone (Rocephin) 500mg over 40 minutes. The drug is supplied as 1GM/50ml. The drop factor is 60. How many gtt/min should you deliver?

5. Give promethazine (Phenergan) 12.5mg IV now. The drug is supplied as 40mg/10ml. How many mLs will you deliver?

6. Dobutrex (Dobutamine) is infusing at 15 ml/hr. Calculate the dose in mcg/kg/min. The concentration is 500mg/250ml. The patient weighs 203 lbs.

7. The order is to infuse amiodarone (Cordarone) 0.5 mg/min. The drug is supplied as 450mg/250 ml of D5W. At what rate should the pump be set at?

8. Propofol (Diprivan) is infusing at 7 ml/hr. The drug is supplied as 1GM/100ml. The patient weighs 160 lbs. How many mcg/kg/min is the patient receiving?

9. Nitroprusside (Nipride) is ordered to maintain a systolic blood pressure less than 180. The starting dose is 0.4mcg/kg/min. The drug is supplied as 50mg/250ml and the patient weighs 94kg. What rate should be set on the pump?

10. The order is for metoprolol (Lopressor) 2.5mg IV push for acute chest pain. The drug is supplied as 10mg/2ml. How many mL's should you deliver?

11. The patient is receiving diltiazem (Cardizem) 10ml/hr. The drug is supplied as 250mg/500ml. How many mg/hr are infusing?

12. Xylocaine (Lidocaine) is infusing at 30ml/hr for ventricular tachycardia. The drug is supplied as 2GM/500ml. How many mg/min are infusing?

13. The patient is to receive Cipro 400 mg IV over 1 hour. You receive a bag from the pharmacy labeled Cipro 400 mg in 100 ml D5W. The IV tubing delivers 12 gtt/ml. How many drops per minute (gtt/min) will you deliver?

14. The patient is on a Dopamine drip infusing at 35 ml/hr. The label reads 400 mg Dopamine in 500 ml D5W. The patient weighs 62 kg. How many mcg/kg/min is the patient receiving?

15. The order is to begin a Nitroglycerin infusion at 5 mcg/min. The bottle is labeled 25 mg/ 250 ml D5W. At what rate will you set the pump?