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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?

$$\begin{array}{l} 10 \text{ mL/hr} \\ 250 \text{ mg} / 250 \text{ mL} \\ 250000 / 250 \text{ mL} \times 10 \\ \text{mcg} \end{array} \quad \begin{array}{l} 82 \text{ kg} \times 60 \\ 4920 \\ 10000 \div 4920 \end{array} \quad \boxed{2 \text{ mcg/kg/min}}$$

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.

$$\begin{array}{l} 13 \text{ mL/hr} \\ 4 \text{ mg} / 250 \text{ mL} \\ 4000 / 250 \text{ mL} \\ 16 \text{ mcg/mL} \end{array} \quad \begin{array}{l} 16 \times 13 \\ 208 \div 60 \end{array} \quad \boxed{3.5 \text{ mcg/min}}$$

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?

$$\begin{array}{l} 10 \text{ mcg/kg/min} \\ 10 \times 68 \times 60 \\ \hline 1600 \end{array} \quad \begin{array}{l} 400 \text{ mg} / 250 \text{ mL} \\ 400000 / 250 \text{ mL} \\ 1600 \end{array} \quad \boxed{25.5 \text{ mL/hr}}$$

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 bottle is labeled propofol 1 GM/100mL. The patient weighs 90 kg.

$$\begin{array}{l} 8 \text{ mcg} / 90 \text{ kg} / 60 \\ 10000 / \text{mL} \end{array} \quad \begin{array}{l} 43200 \\ \hline 10000 \\ 4.3 \end{array} \quad \boxed{4.3 \text{ mL/hr}}$$

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?

$$\begin{array}{l} 0.5 \text{ mg/min} \\ 450 \text{ mg} / 250 \text{ mL} \\ 1.8 \text{ mg/mL} \end{array} \quad \boxed{17 \text{ mL/hr}}$$

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?

$$\begin{array}{l} 5 \text{ mg/hr} \\ 50 \text{ mg} / 250 \text{ mL} \end{array} \quad \boxed{250 \text{ mL/hr}}$$

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?

$$\begin{array}{l} 800 \text{ units/hr} \\ 25000 \text{ units} / 500 \text{ mL} \end{array} \quad \boxed{16 \text{ mL/hr}}$$

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?

$$\begin{array}{l} 10 \text{ mcg/min} \\ 16 \text{ mg} / 250 \text{ mL} \end{array} \quad \begin{array}{l} 83 \text{ kg} \\ \boxed{9.4 \text{ mL/hr}} \end{array}$$

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?

$$\frac{100 \text{ mL} \times 20}{90} \quad \boxed{22 \text{ gtt/min}}$$

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?

$$\begin{array}{l} 400 \text{ mg/hr} \\ 400 \text{ mg} / 100 \text{ mL} \\ 12 \text{ gtt} \end{array} \quad \boxed{20 \text{ gtt/min}}$$

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.

$$\begin{array}{l} 35 \text{ mL/hr} \\ 400 \text{ mg} / 500 \text{ mL} \end{array} \quad \begin{array}{l} 62 \text{ kg} \times 60 \\ 3720 \\ 28000 \end{array} \quad \boxed{7.5 \text{ mcg/kg/min}}$$

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?

60 mcg/min

25mg / 250mL

100 mcg/mL

36 mL/hr

6,000

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?

6 units/hr

50 units / 100 mL

12 mL/hr

14. The patient is to receive 3 units of blood over 5 hours. Each unit contains 250 mL of 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.

3 units / ~~5 hrs~~ 300 mins

Unit / 250 mL

50 gtt/min

$750 \times 20 \div 300$

3 units / 750 mL

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.

0.5mg/min
450mg / 250 mL

16.7 mL/hr

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

16.7 mL/hr
450 mg / 250 mL

0.5mg/min

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.

15 mL/hr
500mg / 250 mL
92.27
2000/mc

5536
30000

5.4 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?

1200 u/hr
25000 / 500 mL

24 mL/hr

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.

10 mcg/min
8mg / 250 mL

19 mL/hr

32mcg/mL

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.

mcg/kg/min

$$\frac{17 \text{ mL/hr} \times 1000 \text{ mcg/mL}}{100 \text{ mL}} \times 80 \text{ kg} = 35.4 \text{ mcg/kg/min}$$

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 units/hr

50 units/100 mL

16 mL/hr

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

are infusing?

10 mL/hr

25,000 / 500 mL

500 units/hr

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

2 gm / 500 mL

2000 mg / 500 mL

4 mg/mL

2 mg/min

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

many mL/hr should you infuse?

100 mcg/hr

1000 / 250 mL

25 mL/hr

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

min is infusing?

30 mL/hr

100 mg / 100 mL

0.5 mg/min

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

units/hr are infusing?

24 mL/hr

25000 / 500 mL

500 / mL

1200 units/hr

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?

$$\frac{5 \text{ units/hr}}{100 \text{ units} / 250 \text{ mL}} = 12.5 \text{ mL/hr}$$

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?

$$\frac{800 \text{ units/hr}}{25000 \text{ units} / 500 \text{ mL}} = 16 \text{ mL/hr}$$

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?

$$\frac{23 \text{ mL/hr}}{4 \text{ mg} / 250 \text{ mL}} \times 87 \text{ kg} = 6.1 \text{ mcg/min}$$

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?

$$\frac{500 \text{ mg} / 40 \text{ min}}{1 \text{ gm} / 50 \text{ mL}} \times 60 = 38 \text{ gtt/min}$$

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

$$\frac{12.5 \text{ mg}}{40 \text{ mg} / 10 \text{ mL}} = 3.1 \text{ mL}$$

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.

$$\begin{array}{r} 15 \text{ ml/hr} \\ 500 \text{ mg} / 250 \text{ mL} \\ \hline 2000 \text{ mL} \end{array} \quad \begin{array}{r} \text{mcg/kg/min} \\ 92.3 \text{ } \cancel{60} \\ \hline 30000 \end{array}$$

5.4 mcg/kg/min

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?

$$\begin{array}{r} 0.5 \text{ mg/min} \\ 450 \text{ mg} / 250 \text{ mL} \end{array}$$

16.7 mL/hr

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?

$$\begin{array}{r} 7 \text{ ml/hr} \\ 1000000 / 100 \text{ mL} \\ \hline 10000 \text{ mL} \end{array} \quad \begin{array}{r} 4364 \\ \hline 70000 \end{array}$$

16 mcg/kg/min

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?

$$\begin{array}{r} 0.4 \text{ mcg/kg/min} \\ 94 \text{ } \cancel{60} \end{array}$$

11.3 mL/hr

$$50 \text{ mg} / 250 \text{ mL} \quad 200 \text{ mcg/mL}$$

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?

0.5 mL

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

$$\begin{array}{r} 10 \text{ ml/hr} \\ 250 \text{ mg} / 500 \text{ mL} \end{array}$$

5 mg/hr

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

$$30 \text{ mL/hr}$$

$$2000 / 500 \text{ mL}$$

$$30 \div 500 \times 2000$$

$$1.5 \text{ mg}$$

$$120 \div 60$$

$$2 \text{ mg/min}$$

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?

$$400 \text{ mg/hr}$$

$$400 \text{ mg} / 100 \text{ mL}$$

$$12 \text{ gtt/mL}$$

$$20 \text{ gtt/min}$$

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?

$$35 \text{ mL/hr}$$

$$400 \text{ mg} / 500 \text{ mL}$$

$$400000 \text{ mcg} / 500 \text{ mL}$$

$$62$$

$$800 \text{ mcg/mL}$$

$$\frac{3720}{28000}$$

$$7.5 \text{ mcg/kg/min}$$

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?

$$5 \text{ mcg/min}$$

$$25 \text{ mg} / 250 \text{ mL}$$

$$3 \text{ mL/hr}$$

$$25000 \text{ mcg} / 250 \text{ mL}$$

$$100 \text{ mcg/mL}$$