Dustin

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?

$$250,000/250ml = 1000 mcg/ml$$
$$10/60 = 0.1667$$
$$1000 \times 0.1667 = 166.67$$
$$166.67/82 = 2.03261$$

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.

$$\frac{4mg}{250ml} = 0.016mg \times 1000 = 16mcg/ml$$
$$13/60 = 0.2167$$
$$16 \times 0.2167 = 3.46 = 3.5$$

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?

$$10mcg \times 68 = 680mcg/kg/min$$
$$400,000mcg/250 = 1600$$
$$680mcg/min \times 250ml/400,000 = 0.425$$
$$60 \times 0.425 = 25.5$$

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.

$$1000/100ml = 10 \times 1000 = 10,000$$
$$8mcg \times 90 = 720$$
$$10/720 = 0.1384 \quad 720/10,000 = 0.072 \quad 4.3ml/hr$$
$$0.1389 \times 60 = 8.334$$
$$0.072 \times 60 = 4.3$$

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?

$$450,000/250ml = 1800$$
$$450mg/250ml = 1.8mg/ml$$
$$0.2778 \times 60 = 16.67$$

$$\frac{0.5mg}{1.8mg} = 0.2778$$

16.67

16.7ml/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?

50mg/250ml 0.2 $\frac{5 mg}{0.2 mg}$ = 25 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?

25000/500 = 50 d
800/50 = 16 ~~units/hr~~   16 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?

10 mcg/min / 1000 = 0.01 mg
16 mg/250 ml = from 250/16 = 15.625
~~ow~~ 15.625 / 100 = ~~maxsuas~~ 0.15625
0.15625 x 60 = 9.375 = 9.4 mL/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?

$\frac{100}{90}$ x 20 = 22.22 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?

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

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.

$450/250ml = 1.8 mg/ml$
$0.5/1.8 = 0.27$

$\dfrac{450 mg}{250 ml} = \dfrac{0.5mg}{x ml}$

$450x = 250 \times 0.5$
$450x = 125$
$125/450 = 0.277$

$0.27 \times 60 = 16.67$
0.3

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

$450mg/250ml = 1.8mg/ml$
$16.7 \times 1.8 = 30.06mg/ml$
$30.06mg/60 = 0.5a mg/min$

$0.5mg/min$

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.

$500mg/250ml/2$ $203/2.2 = 92.27$
$15ml/hr \times 2mg/ml = 30mg/hr$ $30 \times 1000 = 30,000$
$30,000/60 = 500mcg/min$ $500mcg/92.27 = 5.42mcg$

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

$25000/500ml = 50unit$
$1200/50 = 24ml/hr$

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.

$8000mcg/250ml = 32$
$10mcg/32 = 0.3125$ $19ml/hr$
$0.3125 \times 60 = 18.75$

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.

$$450/250\text{ml} = 1.8\text{mg/ml}$$
$$0.5/1.8 = 0.27$$
$$0.27 \times 60 = \boxed{16.67}$$

$$\frac{450\text{mg}}{250\text{ml}} = \frac{0.5\text{mg}}{X\text{ml}}$$

$$450X = 250 \times 0.5$$
$$450X = 125$$
$$125/450 = 0.277$$
$$0.3$$

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

$$450\text{mg}/250\text{ml} = 1.8\text{mg/ml}$$
$$16.7 \times 1.8 = 30.06\text{mg/ml}$$
$$30.06\text{mg} / 60 = 0.5a\text{mg/min}$$ $$0.5\text{mg/min}$$

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.

$$500\text{mg}/250\text{ml}/2 \qquad 203/2.2 = 92.27$$
$$15\text{ml/hr} \times 2\text{mg/ml} = 30\text{mg/hr} \quad 30 \times 1000 = 30,000$$
$$30,000/60 = 500\text{mcg/min} \quad 500\text{mcg}/92.27 = 5.42\text{mcg}$$

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

$$25000/500\text{ml} = 50\text{unit}$$
$$1200/50 = 24\text{ml/hr}$$

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.

$$8000\text{mcg}/250\text{ml} = 32$$
$$10\text{mcg}/32 = 0.3125 \qquad 19\text{ml/hr}$$
$$0.3125 \times 60 = 18.75$$

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?

$50 u/100/ = 0.5$

$8/0.5 = 16 u/hr$

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

$25,000/500 ml = 50 u$

$50 u \times 10 ml = 500 u/hr$

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

$2,000/500 = 4$ $30/60 = 0.5$

$4 \times 0.5 = 2 mg/min$

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

$1 mg/250 ml = 0.004 \times 1000 = 0.1$

$\dfrac{0.1}{60} \times \dfrac{250}{1 mg}$ $1 mg/250 = 0.004$

$0.004 \times 1000 = 4$

$100/4 = 25 ml/hr$

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

$30/60 = 0.5$

$0.5 \times 1 = 0.5 mg/min$

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

$25,000/500 ml = 50$

$50 \times 24 = 1200 u/hr$

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?

100/250 = 0.4 units/ml
5/0.4 = 12.5 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?

25000/500ml = 50 $\frac{25000}{500}$ $\frac{800}{X}$ $X = \frac{500 \times 800}{25000}$

$X = \frac{400000}{25000}$ $X = 16 ml$

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?

4/250 = 0.016   23 m/hr × 0.016 mg/ml = 0.368   0.368 × 1000 / 60
= 6.1333 mcg

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?

1GM/2 = 500 = 25ml $\frac{25}{40} \times 60 = 37.5$ gtt/min

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

40mg/10ml = 4
12.5 × 4 =
40x = 12 × 10
40x 125
$x = \frac{125}{40}$
x = 3.125

$\frac{12.5}{40} \times 10 = \frac{125}{40}$
3.125 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.

203

92.27kg

500mg/250ml

500,000 ÷ 250 = 2000

15 × 2000

30,000 ÷ 60 = 500

500 ÷ 92.27 = 54 mcg

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?

450mg/250ml   1.8 mg/m $\frac{0.5}{1.8}$ = .27 × 60

16.66 = 16.7ml/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?

160 /2.2 = 72.72

1000/100 = 10 × 1000 = 10,000

10,000 × 7 = 70,000

7,000/60 = 1,166

1,166/72.72 = 16.0 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?

50 × 1000 = 50,000/250 = 200

200 × 0.4 = 80   37.6/200∠1.88

0.4 × 94 = 37.6   1.88 × 60 = 11.3 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?

10/2 = 5mg/ml

2.5 ÷ 5 = 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?

$$250/500 = 0.5 \times 10 = 5mg/hr$$

12. Xylocaine (Lidocaine) is infusing at 30ml/hr for ventricular tachycardia. The drug is

supplied as 2GM/500ml. How many mg/min are infusing?

$$2,000/500 = 4 \quad 4 \times 30 = 120 \quad 120/60 = 2mg/min$$
$$2mg/min$$

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?

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

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?

$$400/500 = 0.8 \quad 0.8 \times 1000 = 800$$
$$800 \times 35 = 28,000$$
$$28,000/60 = 466.667$$
$$466.667/62 = 7.53 = 7.5mcg$$

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?

$$25/250 = 0.1 \times 1000 = 100 \quad 5mcg/100 = 0.5$$
$$0.5 \times 60 = 30mg/hr$$