IM 7 Math Module

Complete the required math problems and submit to Math drop box

Name _Guadalupe Carrillo_

$\dfrac{mL \times gtt}{mins} = gtt/min$

1. Infuse 1 gram of a medication over 45 minutes. The drug is supplied as 1gram/50ml.
The drip factor is 15. How many gtt/min will you infuse?

$\dfrac{50mL \times 15 gtt}{45 mins} = 16.66$

$= 17 gtt/min$

$\dfrac{mL}{hr}$

2. The physician writes an order to give 1000mL of intravenous fluid over 8hrs. How
many mL/hr will you infuse?

$= 125 mL/hr$

$\dfrac{1000 mL}{8 hrs}$

3. Infuse 1.5 gram of a medication over 3 hours. The drug is supplied as 1.5 gram/250mL.
The drip factor is 15. How many gtt/min will you infuse?

$\dfrac{250 mL \times 15}{180 min} = 20.83$

$= 21 gtt/min$

4. An order has been written to give 1 gram of a medication over 30 minutes. The drug is
supplied as 1 gram/50mL. The gtt factor is 60. How many gtt/min will you infuse?

$= 100 gtt/min$

$\dfrac{50 mL \times 60 gtt}{30} =$

5. The nurse is to give 500mg IV of a medication over 1 hr. The drug is supplied as
1gram/250mL. The gtt factor is 15. How many gtt/min will you infuse?

$250 \div 2$

125

$= 31 gtt/min$

$\dfrac{125 mL \times 15 gtt}{60 min} = 31.25$

6. An order is received for 75mcg IV of a medication now. The drug is supplied as
100mcg/2mL. How many mL will you give?

$= 1.5 mL$

$\dfrac{75 mcg}{X = 1.5} \quad \dfrac{100 mcg}{2 mL}$

7. Infuse 1000 mLs of intravenous fluid over 4 hrs. How many mL/hr will you set on the
pump?

$= 250 mL/hr$

$\dfrac{1000 mL}{4 hrs}$

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8. The patient is to receive 5mg of a medication. The drug is supplied as 20mg/5mL. How

many mL will you give? (Do not round your final answer)

$$\frac{5mg}{X} \quad \frac{20mg}{5mL} = 1.25 \qquad \boxed{= 1.25 mL}$$

9. The order is to give 2mg IV of a medication now. The drug is supplied as 10mg/mL.

How many mL will you give? $\quad \dfrac{2mg}{X} \quad \dfrac{10mg}{1mL} = 0.2 \qquad \boxed{= 0.2 mL}$

10. Infuse 500mg IV of a medication over 8 hrs. The drug is supplied as 500mg/100mL. The

drip factor is 60. How many gtt/min will you infuse? $\qquad \boxed{= 13 gtt/min}$

$$\frac{100mL \times 60 min}{480 min} = 12.5$$

11. The patient is receiving an intravenous medication currently infusing at 142 mL/hr. The
IV bag of reads 50 mg in 500 mL D5W. The patient weighs 175 lbs. How many mcg/kg/min
are infusing? Round to the nearest tenth. $\quad$ 100 mcg $\qquad \boxed{= 3 mcg/kg/min}$

$175 \div 2.2 = 79.5 kg \qquad \dfrac{50mg}{500mL} = 0.1 mg)$

$100 mcg/mL \times 142 mL/hr \qquad 14,200 \div 4770 = 2.97 mcg/kg/min$

79.5×60

12. The physician has ordered a medication that states to start at 1 mcg/kg/min, and titrate
as needed. The IV bag of medication contains 250 mg in 500 mL D5W. The patient weighs
70 kg. How many mL/hr should the IV pump be set at to achieve the starting dose? Round
to the nearest whole number. $\quad \dfrac{70 kg \times 1 mcg \times 60 min/hr}{500 mcg/mL}$

$\dfrac{250mg}{500 mL} = 0.5 mg/mL \qquad 500 mcg/mL \qquad = 8.4 mL/hr \qquad \boxed{= 8 mL/hr}$

13. The patient is currently receiving a medication at 12 mL/hr. The bottle reads 100 mg in
250 mL D5W. How many mcg/min is the patient receiving?

$\dfrac{100mg}{250mL} = 0.400 \qquad \dfrac{400 mcg/mL \times 12 mL/hr}{60} = 80 \qquad \boxed{= 80 mcg/min}$

14. The physician orders a heparin infusion at 500 units/hr. The IV bag of medication reads
25,000 units in 250 mL D5W. How many mL/hr should be showing on the IV pump?

$\dfrac{25,000 un}{250 mL} \quad 100 un/mL \quad \dfrac{500 units/hr}{100 units/mL} = 5 \qquad \boxed{= 5 mL/hr}$

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15. The physician has ordered a medication to start at 2 mcg/kg/min. The patient weighs 165 lbs. The IV bag reads 800 mg in 500 mL D5W. What rate would the nurse set on the infusion pump? Round to the nearest tenth.

$$165 \div 2.2 = 75 kg$$

$$\frac{800mg}{500mL} \quad 1.6 mg/mL = 1600mcg/mL$$

$$\frac{75kg \times 2mcg/kg/min \times 60}{1600 mcg/mL} = 5.625$$

= 5.6 mL/hr

16. The physician in the previous questions has now written an order to increase the medication to 4 mcg/kg/min. Using the information in the previous question, what rate would the nurse set on the IV pump? Round to the nearest tenth.

= 11.3 mL/hr

$$\frac{75 \times 4mcg \times 60}{1600} = 11.25$$

17. The patient is on a regular insulin drip infusing at 5 units/hr. The bag is labeled 100 units in 250 mL NS. At what rate should the pump be infusing? Round to the nearest whole number.

= 13 mL/hr

$$\frac{100 units}{250mL}$$

$$\frac{5 \; un/hr}{0.4 \; unit/mL} = 12.5 mL/hr$$

18. The patient is on a medication drip infusing at 35 mL/hr. The label reads 400 mg in 500 mL D5W. The patient weighs 62 kg. How many mcg/kg/min is the patient receiving? Round to the nearest tenth.

= 7.5 mcg/kg/min

$$\frac{400mg}{500mL} = 0.8mg/mL \quad 800mcg$$

$$\frac{800mcg \times 35mL/hr}{62kg \times 60 min/hr} = \frac{28,000}{3720} = 7.52$$

19. The physician has ordered 1 gram IV of a medication over 30 minutes. Pharmacy has sent an IV bag labeled 1 gram in 50 mL D5W. The IV tubing delivers 15 gtt/mL. How many drops per minute (gtt/min) will the nurse deliver?

= 25 gtt/min

$$\frac{50mL \times 15gtt}{30 mins} = 25$$

20. The patient is to receive 400 mg IV of a medication over 1 hour. You receive an IV bag from the pharmacy labeled 400 mg in 100 mL D5W. The IV tubing delivers 12 gtt/mL. How many drops per minute (gtt/min) will the nurse deliver?

= 20 gtt/min

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