IM 7 Math Module
Complete the required math problems and check your answers.

Dropbox

$\frac{D}{H}$ Kg mg mcg

Drop Factor Problems

x 60 = 180min?

1. 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? (Round to the nearest whole number)

$$\frac{250mL \times 15 \, gtts}{180 \, min} = 21 \, gtt/min$$

2. 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?

$$\frac{50mL \times 60 \, gtt}{30min} = 100 \, gtt/min$$

3. The nurse is to give 500mg IV of a medication over 1 hr. The drug is supplied as 1 gram/250mL. The gtt factor is 15. How many **gtt/min** will you infuse? (Round to the nearest whole number)

$$\frac{250mL \times 15 \, gtt}{60min} = 63 \, gtt/min.$$

4. 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?

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

mL/hr Infuse over time

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

$$\frac{1000mL}{8hrs} = 125$$

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

$$\frac{1000}{4} = 250$$

7. A physician orders 1000 mg of a medication to be given ~~every 6 hours~~ over 1.5 hours. The medication is delivered with 1000 mg in 250 mL. How many **mL/hr** will you set the pump? (Round to the nearest whole number)

$$\frac{250mL}{1.5hr} = 167$$

IV Push

8. An order is received for 75mcg IV push of a medication now. The drug is supplied as 100mcg/2mL. **How many mL** will you give? $\frac{75}{100} \times 2 = 1.5$

9. The patient is to receive 5mg of a medication IV push. The drug is supplied as 20mg/5mL. How many mL will you give? (Do not round your final answer)

$\frac{5}{20} \times 5 = 1.25$

10. The order is to give 2mg IV push of a medication now. The drug is supplied as 10mg/1mL. How many mL will you give?

$\frac{2}{10} \times 1 = 0.2$

Mcg/kg/min or Mcg/min

[handwritten: K g mg mcg]

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)

[handwritten: 79.54 kg]

$$\frac{50mg}{500ml} = 0.1mg = 100mcg \qquad \frac{100mcg \times 79.54kg}{142ml/hr \times 60min} = 3$$

[handwritten right: conc. × infusion / Wt × 60min. ↳Rate given]

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)

$$\frac{250mg}{500ml} = 0.5mg = \frac{70Kg \times 60min \times 1mcg}{500mcg} = 8mL/hr$$

[handwritten right: Wt × dose × 60min / conc. = infusion rate 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?

$$\frac{100}{250} = 0.4mg = 400mcg \qquad \frac{400 \times 12}{60} = 80 mcg/min$$

14. 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)

[handwritten left: 75kg   1.6mg = 1600]

$$\frac{75kg \times 2mcg \times 60min}{1600mcg} = 5.6 ml/hr$$

15. The physician has written an order to increase the medication to 4 mcg/kg/min. The IV bag reads 64 mcg/mL. What rate would the nurse set on the IV pump? (Round to the nearest tenth)

$$\frac{4 \times 60}{64} = 3.8$$

16. The patient is on a medication drip infusing at 15 mL/hr. The label reads 50 mcg/mL. The patient weighs 65 kg. How many mcg/min is the patient receiving? (Do not round)

[handwritten: dose ... conc.]

$$\frac{50 \times 15}{60m} = 12.5$$

Heparin/Insulin or mg/hr

17. 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?

[handwritten: dose]

$$\frac{25,000}{250} = 100 \qquad \frac{500}{100} = 5ml/hr$$

18. 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.

$$\frac{100}{250} = 0.4 \qquad \frac{5}{0.4} = 13$$

Burns (Parkland Formula) Do not round weights   *[handwritten: 4ml × % × Wt]*

19. A 200-pound patient presents to the emergency department with 50% total body surface area (TBSA) burn. How many liters of fluid would be given in the first 24 hours? (Round to the nearest whole number)

[handwritten: 90 kg]

$$4ml \times 90kg \times 50\% = 18000mL = 18L$$

20. A 150-pound patient presents to the emergency department with 75% total body surface area (TBSA) burn. How many liters of fluid would be given in the first 24 hours? (Round to the nearest whole number)

$$68.18 \times 75\% \times 4mL = 20L$$