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

Drop Factor Problems
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)

$$\frac{250mL}{180min} \times 15 =$$

$$\boxed{21 \text{ gtt/min}}$$

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?

$$\frac{50}{30} \times 60 = \boxed{100}$$

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)

$$\frac{1000mg}{250mL} = \frac{500mg}{X} = 125mL \qquad \frac{125}{60} \times 15 = \boxed{31}$$

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?

$$\frac{100mL}{60} \times 12 \quad \boxed{20}$$

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?

$$\frac{1000mL}{8hr} = \boxed{125mL/hr}$$

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

$$\frac{1000mL}{4hr} = \boxed{250mL/hr}$$

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)

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

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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?

$$\frac{100 \, mcg}{2mL} = \frac{75mcg}{X} = \boxed{1.5 \, mL}$$

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)

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

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?

$$\frac{10mg}{1mL} = \frac{2mg}{X} \qquad \boxed{0.2mL}$$

Mcg/kg/min or Mcg/min

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)

$$\frac{142mL}{X} = \frac{500mL}{50mg} \qquad 19.200 \qquad \boxed{236.7 = k} \qquad \boxed{3}$$

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)

$$\frac{1 \, mcg}{1} = \frac{X}{70 \, kg} \qquad \frac{4200}{X} \qquad \frac{250000}{500} \qquad \boxed{8 \, mL/hr}$$

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?

$$\frac{100mg}{250} = \frac{X}{12} \qquad 4.8mg \qquad 4800 \qquad \boxed{80 \, mcg}$$

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165÷2.2 75

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)

$$\frac{2mcg}{1} = \frac{x}{75} = 150mcg \times 60 \quad \frac{9000mcg}{x} = \frac{800000}{500}$$

5.6

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)

$$\frac{240}{x} = \frac{64}{1} =$$ 3.8 mL/hr

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)

$$\frac{50mcg}{1} = \frac{x}{15mL} = 750mcg$$ 12.5 mcg/min

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?

$$\frac{25000}{250mL} = \frac{500}{5}$$ 5 mL/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.

$$\frac{100u}{250mL} = \frac{5u}{}$$ 13

Burns (Parkland Formula) Do not round weights

4mL/kg

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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)

4mL × 90.9 × 50 18,180 mL = 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)

150 ÷ 2

4 × 68.2 × 75   20,460 mL

Kg

20 L