

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) $250 \times 15 = 3750 / 180 = 20.8 = 21$

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?

$$50 \times 60 = 3000 / 30 = 100 \text{ gtt/min}$$

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)

$$250 / 2 = 125 \times 15 / 60 = 31$$

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?

$$100 \times 12 = 1200 / 60 = 20$$

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? $1000 / 8 = 125 \text{ mL/hr}$

6. Infuse 1000 mLs of intravenous fluid over 4 hrs. How many mL/hr will you set on the pump? $1000 / 4 = 250$

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)

$$1000 / 6 = 167$$

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? $75 / 100 = 0.75 \times 2 = 1.5 \text{ mL}$

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)
 $5 / 20 = 0.25 \times 5 = 1.25$

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?

$$2 / 10 = 0.2 \text{ mL}$$

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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) $175/2.2 = 79.5$

$$50 \times 1000 = 50k \text{ mcg} \quad 50k/500 \quad 100 \times 142 = 14,200$$

$$60 \times 79.5 = 4770$$

$$14200/4770 = 3$$

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) $250/500 = 0.5$

$$70 \times 1 \times 60 = 4200 \quad 250 \times 1000 = 250k/500 = 500 \quad 4200/500 = 8$$

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?

$$100 \times 1k = 100k/250 = 400 \quad 400 \times 12 = 4800/60 = 80$$

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)

$$165/2.2 = 75 \times 2 \times 60 = 9k \quad 800k/500 = 1600 \quad 9k/1600 = 5.6$$

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)

$$4 \times 60/64 = 3.75$$

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)

$$15 \times 50/60 = 12.5$$

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?

$$25k/250 = 100 \text{ units/ml}$$

$$500/100 = 5 \text{ ml/hr}$$

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.

$$100/250 = 0.4 \quad 5/0.4 = 12.5$$

Burns (Parkland Formula) Do not round weights

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) $4 \text{ ml/kg/\%burned}$

$$91 \times 4 = 364 = 18200/1000 = 18$$

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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)