

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) $(250 \times 15) / 90 = 42 \text{gtt/min}$
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? $(50 \times 60) / 30 = 100 \text{gtt/min}$
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) $(125 \times 15) / 60 = 31 \text{gtt/min}$
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? $(100 \times 12) / 60 = 20 \text{gtt/min}$

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? $1000 / 8 = 125 \text{mL/hr}$
6. Infuse 1000 mLs of intravenous fluid over 4 hrs. How many mL/hr will you set on the pump? $1000 / 4 = 250 \text{mL/hr}$
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) $250 / 1.5 = 167 \text{mL/hr}$

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? $100 / 2 = 50 / 1$ $75 / 50 = 1.5 \text{mL}$
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) $20 / 5 = 4 / 1$ $5 / 4 = 1.25 \text{mL}$
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? $2 / 10 = 0.2 \text{mL}$

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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) $50000/500 = 100$
 $(100 \times 142) / (79.5 \times 60) = 3 \text{mcg/kg/min}$
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) $(70 \times 1 \times 60) / 500 = 8 \text{mL/hr}$
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? $(400 \times 12) / 60 = 80 \text{mcg/min}$
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) $(75 \times 2 \times 60) / 1600 = 5.6 \text{mL/hr}$
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) $(75 \times 4 \times 60) / 64 = 281.3 \text{mL/hr}$
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)
 $(50 \times 15) / 60 = 12.5 \text{mL/hr}$

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?
 $25000/250 = 100$ $500/100 = 5 \text{mL/hr}$
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. $5/0.4 = 12.5 \text{mL/hr}$

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) $(4 \times 90.9 \times 50) / 1000 = 18 \text{L}$
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) $(4 \times 68.1 \times 75) / 1000 = 20 \text{L}$