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) $\frac{250\text{mL}}{180\text{min}} \times 15 = 20.8 \rightarrow$ 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? $\frac{50\text{mL}}{30\text{min}} \times 60 =$ 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) $\frac{250\text{mL}}{60\text{min}} \times 15 = 62.5 \rightarrow$ 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? $\frac{100\text{mL}}{60\text{min}} \times 12 =$ 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? $\frac{1000}{8} =$ 125 mL/hr
6. Infuse 1000 mLs of intravenous fluid over 4 hrs. How many mL/hr will you set on the pump? $\frac{1000}{4} =$ 250 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) $\frac{250}{1.5} = 166.6 \rightarrow$ 167 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? $\frac{75\text{mcg}}{100\text{mcg}} \times 2\text{mL} =$ 1.5mL
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) $\frac{5\text{mg}}{20\text{mg}} \times 5\text{mL} =$ 1.25mL
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? $\frac{2\text{mg}}{10\text{mg}} \times 1\text{mL} =$ 0.2mL

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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 lbs = 79.5 kg; $\frac{(142\text{mL/hr})(100\text{mcg}/1\text{mL})}{79.5 \times 60} = 2.97 \rightarrow$ 3 mcg/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) $\frac{(1\text{mcg/kg/min})(70)(60)}{500\text{mcg/mL}} =$ 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? $\frac{12\text{mL/hr}\,(400\text{mcg/mL})}{60} =$ 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) $\frac{(2\text{mcg/kg/min})(75\text{kg})(60)}{1600\text{mcg/mL}} =$ 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) $\frac{4\text{mcg/min} \times 60}{64\text{mcg/mL}} = 3.75 \rightarrow$ 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) $\frac{(15\text{mL/hr})(50\text{mcg/mL})}{60} =$ 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? $\frac{500\text{U/hr}}{100\text{U/mL}} =$ 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. $\frac{5\text{U/hr}}{0.4\text{U/mL}} = 12.5 \rightarrow$ 13 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) 200 lbs = 90.9 kg; $90.9 \times 50 \times 4 = 18{,}180\text{mL} \rightarrow$ 18 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) 150 lbs = 68.2 kg; $68.2 \times 4 \times 75 = 20{,}460\text{mL} \rightarrow$ 20 L