

IM 7 Math Module

Complete the required math problems and submit to Math drop box
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1. Infuse 1 gram of a medication over 45 minutes. The drug is supplied as 1 gram/50ml.

The drip factor is 15. How many gtt/min will you infuse?

$$\frac{50\text{ml} \times 15\text{gtt}}{45\text{min}} = \frac{750}{45} = \boxed{16.66\text{ gtt/min}} \approx \underline{17\text{gtt/min}}$$

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

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

3. 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?

$$\frac{250\text{mL} \times 15\text{gtt/min}}{3 \times 60} = \frac{3750}{180\text{min}} = 20.83 \Rightarrow \boxed{21\text{gtt/min}}$$

4. 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?

$$\frac{50\text{mL} \times 60}{30} \Rightarrow \frac{3000}{30} \Rightarrow \boxed{100\text{gtt/min}}$$

5. The nurse is to give 500mg IV of a medication over 1 hr. The drug is supplied as ^{.5} 1gram/¹²⁵250mL. The gtt factor is 15. How many gtt/min will you infuse?

$$\frac{125\text{mL}}{60} \times 60\text{gtt} = \boxed{31\text{gtt/min}}$$

6. An order is received for 75mcg IV of a medication now. The drug is supplied as

100mcg/2mL. How many mL will you give?

$$0.75\text{mcg} \times 2\text{mL} = \boxed{1.5\text{mL}}$$

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

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

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

$$\frac{5\text{mg}}{20\text{mg}} \times 5\text{mL} = 1.25\text{mL}$$

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

$$\frac{2\text{mg}}{10\text{mg}} \times \text{mL} = 0.2\text{mL}$$

10. Infuse 500mg IV of a medication over 8 hrs. The drug is supplied as 500mg/100mL. The drip factor is 60. How many gtt/min will you infuse?

$$\frac{100\text{mL} \times 60\text{gtt}}{480\text{min/hr}} = 13\text{gtt/min}$$

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.

$$\frac{100\text{mcg/kg/min} \times 142\text{mL/hr}}{80 \times 60} = \frac{14200}{4800} = 3\text{mcg/kg/min}$$

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.

$$\frac{1 \times 70\text{kg} \times 60\text{hr}}{500\text{mcg}} = \frac{4200}{500} = 8\text{mL/hr}$$

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?

$$\frac{400\text{mcg} \times 12\text{mL/hr}}{60} = 80\text{mcg/min}$$

14. 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?

$$\frac{500\text{units}}{25,000\text{units}} \times 250\text{mL} = 5\text{mL/hr}$$

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15. 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.

$$\frac{75 \times 2 \times 160}{800,000 / 500 \text{ mL}} = \frac{24,000}{1,600} = 5.6 \text{ mL/hr}$$

16. The physician in the previous questions has now written an order to increase the medication to 4 mcg/kg/min. Using the information in the previous question, what rate would the nurse set on the IV pump? Round to the nearest tenth.

$$\frac{4 \times 75 \times 160}{1600} = 11.3 \text{ mL/hr}$$

17. 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.

$$\frac{5 \text{ units}}{100 \text{ units}} \times 250 \text{ mL} = 13 \text{ mL/hr}$$

18. The patient is on a medication drip infusing at 35 mL/hr. The label reads 400 mg in 500 mL D5W. The patient weighs 62 kg. How many mcg/kg/min is the patient receiving? Round to the nearest tenth.

$$7.5 \text{ mcg/kg/min}$$

$$\frac{35 \text{ mL/hr} \times 400 \text{ mg}}{62 \text{ kg} \times 160} = \frac{28,000}{3,720}$$

19. The physician has ordered 1 gram IV of a medication over 30 minutes. Pharmacy has sent an IV bag labeled 1 gram in 50 mL D5W. The IV tubing delivers 15 gtt/mL. How many drops per minute (gtt/min) will the nurse deliver?

$$\frac{50 \text{ mL} \times 15 \text{ gtt}}{30 \text{ min}} = 25 \text{ gtt/mL}$$

20. 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?

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