

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 1gram/50ml.

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

$$\frac{50\text{mL} \times 15\text{gtt/mL}}{45\text{min}} =$$

17 gtt/min

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

125 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?

$$\frac{250\text{mL} \times 15\text{gtt/min}}{180\text{min}} = 21\text{gtt/min}$$

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?

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

5. The nurse is to give 500mg IV of a medication over 1 hr. The drug is supplied as ^{1,000mg} 1gram/250mL. The gtt factor is 15. How many gtt/min will you infuse?

$$\frac{125\text{mg} \times 15\text{gtt/min}}{60\text{min}} = 31\text{gtt/min}$$

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?

$$\frac{D}{H} \times V$$

1.5mL

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

250mL/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)

$$1.25 \text{ mL}$$

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?

$$0.2 \text{ mL}$$

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?

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

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.

$$\frac{50}{500} = 100 \text{ mcg}$$

$$\frac{100 \text{ mcg} \times 142 \text{ mL/hr}}{79.5 \text{ kg} \times 60 \text{ min}} = \frac{14,200}{4,770} =$$

$$3.0 \text{ mcg/kg/min}$$

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.

$$\frac{250}{500} = 500 \text{ mcg}$$

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

$$8 \text{ mL/hr}$$

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?

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

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?

$$100 \text{ u/mL}$$

$$\frac{500 \text{ u/hr}}{100 \text{ u/mL}} =$$

$$5 \text{ mL/hr}$$

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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.

$$\frac{75\text{kg} \times 2\text{mcg/kg/min} \times 60\text{min/hr}}{1000\text{mcg/mL}} = 5.6\text{ mL/hr}$$

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.

$$11.3\text{ mL/hr}$$

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.

$$\frac{5\text{u/hr}}{0.4\text{u/mL}} = 13\text{ mL/hr}$$

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.

$$\frac{800 \times 35}{62 \times 60} = \frac{28,000}{3,720} = 7.5\text{ mcg/kg/min}$$

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?

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

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?

$$20\text{ gtt/min}$$