

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?

$$\frac{50 \text{ ml}}{45 \text{ min}} \times 15 \text{ gtt} = 17$$

2. The physician writes an order to give 1000mL of intravenous fluid over 8hrs. How

many mL/hr will you infuse?

$$\frac{1000 \text{ ml}}{8 \text{ hrs}} = 125$$

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?

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

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?

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

5. The nurse is to give 500mg IV of a medication over 1 hr. The drug is supplied as

1gram/250mL. The gtt factor is 15. How many gtt/min will you infuse?

$$\frac{250 \text{ ml}}{60 \text{ min}} \times 15 \text{ gtt} = 63$$

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?

$$\frac{75 \text{ mcg}}{100 \text{ mcg}} \times 2 \text{ mL} = 1.5$$

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

pump?

$$\frac{1000 \text{ ml}}{4 \text{ hrs}} = 250$$

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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)

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

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?

$$\frac{2\text{mg}}{10\text{mg}} \times 1\text{mL} = 0.2\text{mL}$$

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?

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

- ? 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.

$$175\text{lbs} = 79.5\text{kg}$$

$$50\text{mg} \div 500\text{mL} = 0.1\text{mg/mL} \times 1000 = 100\text{mcg/mL}$$

$$\frac{100\text{mcg/mL} \times 142\text{mL/hr}}{79.5\text{kg} \times 60\text{min}} = \frac{14,200}{4,770} = 2.9$$

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.

$$250\text{mg} \div 500\text{mL} = 0.5$$

$$0.5 \times 1000 = 500\text{mcg/mL}$$

$$\frac{70 \times 1 \times 60}{500} = \frac{4200}{500} = 8$$

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?

$$100\text{mg} \div 250\text{mL} = 0.4\text{mg/mL}$$

$$0.4 \times 1000 = 400\text{mcg/mL}$$

$$\frac{400 \times 12}{60} = \frac{4800}{60} = 80$$

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?

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

100 u/mL

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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.

$$165 = 75 \text{ kg}$$

$$800 \div 500 = 1.6 \text{ mg/mL} \times 1000 = 1600 \text{ mcg/mL}$$

$$\frac{75 \times 2 \times 60}{1600} = \frac{9000}{1600} = 5.6$$

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.

$$\frac{75 \times 4 \times 60}{1600} = \frac{18000}{1600} = 11.3$$

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.

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

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.

$$\frac{400 \text{ mg}}{500 \text{ mL}} = 0.8 \text{ mg/mL}$$

$$0.8 \text{ mg} \times 1000 = 800 \text{ mcg/mL}$$

$$\frac{800 \times 35}{62 \times 60} = \frac{28000}{3720} = 7.5$$

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?

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

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?

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