

## 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?

$$50 \times 15 = 750$$
$$750/45 = \underline{17\text{gtt/min}}$$

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

$$1000/8 = \underline{125\text{mL/hr}}$$

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?

$$250 \times 15 = 3750$$
$$3750/180 = \underline{21\text{gtt/min}}$$

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?

$$50 \times 60 = 3000$$
$$3000/30 = \underline{100\text{gtt/min}}$$

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?

$$250 \times 15 = 3750$$
$$3750/60 = 62.5$$
$$62.5/2 = \underline{31\text{gtt/min}}$$

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?

$$75/100 \times 2 = \underline{1.5\text{mL}}$$

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

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

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)

$$5/20 \times 5 = \underline{1.25\text{mL}}$$

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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?

$$2/10 = \underline{0.2\text{mL}}$$

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?

$$100*60 = 6000$$
$$6000/480 = \underline{13\text{gtt/min}}$$

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.

$$175/2.2 = 79.5\text{kg}$$
$$50,000/500 = 100\text{mcg}$$
$$100*142 = 14200$$
$$79.5*60 = 4770$$
$$14200/4770 = \underline{3\text{mcg/kg/min}}$$

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.

$$250*1000 = 250000\text{mcg}$$
$$250000/500 = 500\text{mL}$$
$$70*1*60 = 4200$$
$$4200/500 = \underline{8\text{mL/hr}}$$

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?

$$100*1000 = 100000\text{mcg}$$
$$100000/250 = 400$$
$$400*12 = 4800$$
$$4800/60 = \underline{80\text{mcg/min}}$$

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?

$$25000/250 = 100$$
$$100/500 = \underline{5\text{mL/hr}}$$

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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.

$$\begin{aligned}165/2.2 &= 75\text{kg} \\800 * 1000 &= 800000\text{mcg} \\75 * 2 * 60 &= 9000 \\9000/1600 &= \underline{5.6\text{mL/hr}}\end{aligned}$$

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.

$$\begin{aligned}75 * 4 * 60 &= 180000 \\180000/1600 &= \underline{11.3\text{mL/hr}}\end{aligned}$$

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.

$$\begin{aligned}100/250 &= 0.4\text{units/mL} \\0.4 * 5 &= \underline{2\text{mL/hr}}\end{aligned}$$

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.

$$\begin{aligned}400000/500 &= 800 \\800 * 35 &= 280000 \\62 * 60 &= 3720 \\280000/3720 &= \underline{7.5\text{mcg/kg/min}}\end{aligned}$$

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?

$$50 * 15/30 = \underline{25\text{gtt/min}}$$

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?

$$100 * 12/60 = \underline{20\text{gtt/min}}$$