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?

$\frac{50mL \times 15gtt}{45min}$ $\frac{750}{45} = 16.7 = 17$

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

$\frac{1000mL}{8\ hrs} = 125\ mL/hr$

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?

$\frac{1.5g}{3hrs} = 0.5g/hr$ $\frac{250mL \times 15}{180min} = \frac{3750}{180} = 20.8 = 21$

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?

$\frac{50mL \times 60}{30} = 100$

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?

500mg/1hr
1000mg/2hr

$\frac{250 \times 15}{120min} = \frac{3750}{120} = 31.3 = 31$

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?

$\frac{75mcg}{50mcg} = 1.5$ or $\frac{75mcg}{100mcg} \times 2 = 1.5$

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

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

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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)

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

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?

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

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?

$\frac{100mL \times 60}{480min} \quad \frac{6,000}{480} = 13 = 12.5gtt/min$

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.

$\frac{100mcg/mL \times 142mL/hr}{79.5kg \times 60min/hr} \quad \frac{14,200}{4770} = 3mcg$

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.

$(500mcg/mL) \quad 0.5mg/mL \quad 70kg$

$1mcg \times 70 \times 60 = 4,200 mcg/hr \quad 4.2mg/hr$

$\frac{4.2}{0.5} = 8mL/hr$

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?

$\frac{100mg}{250mL} = 0.4mg/mL$

$0.4 \times 12 = 4.8mg/hr = 0.08mg/min = 80mcg/min$

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?

$\frac{25000}{250} = 100u/mL \quad 5mL/hr$

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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.

2 x 75 x 60 = 9000 mcg/hr

75kg

$\frac{800}{500} = 1.6 mg/mL$

1600 mcg/mL

5.6mL/hr = 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.

4 x 75 x 60 = 18,000 mcg/hr

1600mcg/mL

11.3mL/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.

5u/hr

$\frac{100u}{250mL} = 0.4 u/mL$

$\frac{5}{0.4} = 12.5 mL/hr = 13$

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.

$\frac{\text{Concentration x rate}}{\text{kg x min/hr}}$

$\frac{0.8 \times 35}{62 \times 60} = \frac{28}{3720} = \frac{400}{500}$

7.5 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?

$\frac{15 \times 50}{30} = \frac{750}{30} =$ 25 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?

$\frac{\text{Volume x drop factor}}{\text{time (minutes)}}$

$\frac{100 \times 12}{60} = \frac{1200}{60}$

20 gtt/min