Solutions for Sample Medication Administration Math Problems

1) A patient weighs 220lbs. they need to be given 2mg/kg, you have the medication in 50mg/10ml. How many ml of medication does the patient need?

$$220\ lbs.\times \left(\frac{1\ kg\ of\ body\ weight}{2.2\ lbs.}\right) \times \left(\frac{2\ mg\ medication}{1\ kg\ of\ body\ weight}\right) \times \left(\frac{10\ mL\ og\ solution}{50\ mg\ medication}\right) = 40\ mL$$

2) A patient weighs 330lbs. they need to be given 4mg/kg, you have the medication in 25 mg tablet form. How many tablets of the medication does the patient need?

$$330\ lbs.\times \left(\frac{1\ kg\ of\ body\ weight}{2.2\ lbs.}\right) \times \left(\frac{4\ mg\ medication}{1\ kg\ of\ body\ weight}\right) \times \left(\frac{1\ tablet}{25\ mg\ medication}\right) = 24\ tablets$$

3) You need to infuse 25 ml in 10 minutes per infusion pump. What should the rate be set at in ml/hr?

$$\frac{25\ mL}{10\ min} \times \left(\frac{60\ min}{1\ hr}\right) = 150\ \frac{mL}{hr}$$

4) A patient weighs 110lbs. they need to be given 5mg/kg, you have the medication in 125mg/10ml. How many ml of medication does the patient need?

$$110\ lbs.\times \left(\frac{1\ kg\ of\ body\ weight}{2.2\ lbs.}\right) \times \left(\frac{5\ mg\ medication}{1\ kg\ of\ body\ weight}\right) \times \left(\frac{10\ mL\ of\ solution}{125\ mg\ medication}\right) = 20\ mL$$

5) You need to give 60mg/kg of medication to a patient weighing 330lbs. the medication you have is 50 grains per caplet. How many Caplets must be given to the patient?

$$330\ lbs. \times \left(\frac{1\ kg\ of\ body\ weight}{2.2\ lbs.}\right) \times \left(\frac{60\ mg\ medication}{1\ kg\ of\ body\ weight}\right) \times \left(\frac{1\ grain\ medication}{60\ mg\ medication}\right)$$
$$\times \left(\frac{1\ caplet}{50\ grains}\right) = 3\ caplets$$

6) At what rate should you set the infusion pump, if you need to give 8 grams/hr per infusion pump and you have 80 grams in 100 ml on hand?

$$\frac{8\ grams}{1\ hr} \times \left(\frac{100\ mL}{80\ grams}\right) = 10\frac{mL}{hr}$$

7) You need to give 120mg/kg of medication to a patient weighing 110lbs. the medication you have is 20 grains per caplet. How many Caplets must be given to the patient?

$$110\ lbs. \times \left(\frac{1\ kg\ of\ body\ weight}{2.2\ lbs.}\right) \times \left(\frac{120\ mg\ medication}{1\ kg\ of\ body\ weight}\right) \times \left(\frac{1\ grain\ medication}{60\ mg\ medication}\right)$$
$$\times \left(\frac{1\ caplet}{20\ grains}\right) = 5\ caplets$$

8) A medication is 40 grams in 200 ml, and the medication is running at 25 ml/hr. What is the drug rate per hr?

$$\frac{25\ mL}{1\ hr} \times \left(\frac{40\ grams}{200\ mL}\right) = 5\ \frac{grams}{hr}$$

9) How many gtt/min are needed, if 600 ml must be infused in an hour at a drip factor of 60?

$$\frac{600\ mL}{1\ hr} \times \left(\frac{60\ gtt}{1\ mL}\right) \times \left(\frac{1\ hr}{60\ min}\right) = 600\frac{gtt}{min}$$

10) Using a drip factor of 15 to deliver 400 ml in 2 hours. How many gtt/min are needed?

$$\frac{400\ mL}{2\ hr} \times \left(\frac{15\ gtt}{1\ mL}\right) \times \left(\frac{1\ hr}{60\ min}\right) = 50\frac{gtt}{min}$$

11) You need to infuse 50 ml in 30 minutes per infusion pump. What should the rate be set at in ml/hr?

$$\frac{50\ mL}{30\ min} \times \left(\frac{60\ min}{1\ hr}\right) = 100\frac{mL}{hr}$$

12) A patient weighs 165 lbs. they need to be given 2mg/kg, you have the medication in 50 mg tablet form. How many tablets of the medication does the patient need?

$$165\ lbs.\times \left(\frac{1\ kg\ of\ body\ weight}{2.2\ lbs.}\right) \times \left(\frac{2\ mg\ medication}{1\ kg\ of\ body\ weight}\right) \times \left(\frac{1\ tablet}{50\ mg\ medication}\right) = 3\ tablets$$

13) At what rate should you set the infusion pump, if you need to give 10 grams/hr per infusion pump and you have 50 grams in 100 ml on hand?

$$\frac{10\ grams}{1\ hr} \times \left(\frac{100\ mL}{50\ grams}\right) = 20\frac{mL}{hr}$$

14) Using a drip factor of 10 to deliver 600 ml in 4 hours. How many gtt/min are needed?

$$\frac{600\ mL}{4\ hr} \times \left(\frac{10\ gtt}{1\ mL}\right) \times \left(\frac{1\ hr}{60\ min}\right) = 25\frac{gtt}{min}$$

15) A medication is 25 grams in 100 ml, and the medication is running at 100 ml/hr. What is the drug rate per hr?

$$\frac{100\ mL}{1\ hr} \times \left(\frac{25\ grams}{100\ mL}\right) = 25\frac{grams}{hr}$$

16) A patient weighs 440 lbs. they need to be given 5 mg/kg, you have the medication in 100mg/10ml. How many ml of medication does the patient need?

$$440 \, lbs. \times \left(\frac{1 \, kg \, of \, body \, weight}{2.2 \, lbs.}\right) \times \left(\frac{5 \, mg \, medication}{1 \, kg \, of \, body \, weight}\right) \times \left(\frac{10 \, mL}{100 \, mg \, medication}\right) = 100 \, mL$$

17) A patient weighs 55 lbs. they need to be given 3mg/kg, you have the medication in 25 mg tablet form. How many tablets of the medication does the patient need?

$$55 \, lbs. \times \left(\frac{1 \, kg \, of \, body \, weight}{2.2 \, lbs.}\right) \times \left(\frac{3 \, mg \, medication}{1 \, kg \, of \, body \, weight}\right) \times \left(\frac{1 \, tablet}{25 \, mg \, medication}\right) = 3 \, tablets$$

18) Using a drip factor of 60 to deliver 360 ml in an hour. What gtt/min is needed?

$$\frac{360 \, mL}{1 \, hr} \times \left(\frac{60 \, gtt}{1 \, mL}\right) \times \left(\frac{1 \, hr}{60 \, min}\right) = 360 \frac{gtt}{min}$$

19) You need to infuse 100 ml in 20 minutes per infusion pump. What should the rate be set at in ml/hr?

$$\frac{100 \, mL}{20min} \times \left(\frac{60 \, min}{1 \, hr}\right) = 300 \frac{mL}{hr}$$

20) You need to give 60mg/kg of medication to a patient weighing 55 lbs. the medication you have is 25 grains per caplet. How many Caplets must be given to the patient?

$$55 \, lbs. \times \left(\frac{1 \, kg \, of \, body \, weight}{2.2 \, lbs.}\right) \times \left(\frac{60 \, mg \, medication}{1 \, kg \, of \, body \, weight}\right) \times \left(\frac{1 \, grain}{60 \, mg \, medication}\right)$$
$$\times \left(\frac{1 \, caplet}{25 \, grains}\right) = 1 \, caplet$$