1. The physician ordered Dilantin (phenytoin) 3-6 mg/kg/24h in four divided doses. The drug is available as Dilantin Suspension 25 mg/5ml. If the infant weighs 9 lbs 10 oz, how many mg to the 1,000ths place per dose will you administer for the maximum dosage?

2. Diflucan (fluconazole Injection) has been ordered at 5.2 micrograms per kilogram per min IV. The drug is available as labeled below. The patient weighs 180 lbs. How many mL/hr will you administer (Round to the nearest whole number)?

3. Order: Cefclor (cefaclor) 400 mg po q12h. Available: Cefclor 375 mg/mL suspension. Child’s weight: 15 kg. Manufacturer information recommends a total daily dose of 30 to 50 mg per kg, in two divided doses.
   a. What is the recommended safe daily dose range in whole numbers as mg/day for this patient?
   b. Is the dose within the recommended range?

4. Order: Dexamethasone 1 mg po BID. The drug is available as 5 mg in 10 mL. How many mL (whole number) will you give for each dose?
5. Order: Dexamethasone 1 mg po BID for 10 days. The drug is available as 5 mg in 10 mL. How many mL (whole number) will you give each day (24h)?

6. An eight year-old child weighs 75 pounds. There is an order to give the child 50 mg/kg/day of aspirin in 4 divided doses. How many mg (nearest whole number) will you give per dose?

7. The microdip IV solution set is dripping at 25gtts/min. Available: Dobutamine 500 mg in 500 mL D5W. Patient’s weight: 85 kg. How many mcg/kg/min is the patient receiving? (Round the final answer to the nearest tenth if necessary.)

8. You are to prepare an insulin drip of 350 U Regular Iletin I insulin in 500 mL 0.45% NS. How many mL (10ths place) will you withdraw from the vial labeled below?

![Insulin Vial Label](image)

9. A 10-year-old child and has been ordered to have 25 mg/kg/day of clindamycin. The dose is given every six hours. The child weighs 80 pounds. How many mg (to the nearest whole number) of clindamycin will you give for each dose?

10. Order: Loperamide 4 mg p.o. bid. Available: 1mg/5mL. How many milliliters will you administer per dose? (Round to the whole number if necessary.)
11. The nurse practitioner has prescribed a continuous IV of heparin 25,000 units in 500 mL of NS via an electronic infusion device at a rate of 20 units/kg/hour. The patient weighs 130 pounds. How many units/hour (nearest tenth) should the patient receive?

12. Give Aldomet (methyldopa) 300 mg IVPB in 100mL D5W over 30 minutes. The administration set has a drop factor of 15. How many gtts/minute will you deliver?

13. Intropin (dopamine) is infusing at 23 gtts/min via a microdrip infusion set. The drug is supplied as 200mg in 250 mL of NS. The patient weighs 132 lbs. How many mg/kg/min (to the nearest thousandth) is the patient receiving?

14. Tagamet is infusing at 12 gtts/min. It is supplied as 2000 mg to 1000mL D5W. Administration set delivers 15 gtts/mL. The patient’s weight is 140 pounds. How many mg/kg/hr (nearest tenth) are infusing?

15. Patient’s weight: 125 lbs. The drug is available as 100 mcg/mL. If the IV is infusing at 17 mL/hr, how many mcg/kg/min (round to the tenths place) are infusing?

16. The patient has an order to receive 1000 mL of D5W over 8 hours. Four hours after the infusion begins you note that only 300 mL have infused. If the solution set has a drop factor of 10, how many gtts/min should you administer the rest of the D5W so that the patient gets the prescribed amount in the correct time frame?
17. An IV solution of 0.9% NS has 120 milliliters of LIB. If the infusion rate is 50 drops per minute and the drop factor is 15 drops per milliliter, how many minutes (whole number) will it take to complete the infusion?

18. You are to infuse 20 mL of a solution in 20 minutes. Using a micro drip set, find the flow rate (gtts/min).

19. The order reads “Vitamin B₁₂ 2 mcg/kg IM. The patient weighs 114 pounds. How many milligrams (round to the tens place) of the vitamin equals this dose?

20. Order Tofranil (imipramine pamoate) 0.05 grams BID. If each tablet contains 25 milligrams, how many tablets will you give for each dose?

21. Order: Versed (midazolam hydrochloride) 4 mg IM q 8 hours as needed for pain. Child’s weight: 20 kg. The manufacturer recommends 0.08 – 0.2 mg/kg/dose q8h.
   a) How many mg/kg/dose (10ths place) have been ordered for the patient?
   
   b) What is the minimum and maximum safe dose range (10ths place) for the patient?
   
   c) Is the dose within the safe dose range?
Answers

1. \[ \frac{6.563 \text{ mg}}{\text{dose}} = \frac{6 \text{ mg}}{\text{kg/day}} \times \frac{1 \text{ kg}}{2.2 \text{ lbs}} \times \frac{9.625 \text{ lb}}{1 \text{ day}} \times \frac{1}{4 \text{ dose}} \]

2. \[ \frac{13 \text{ mL/hr}}{\text{hr}} = \frac{100 \text{ mL}}{200 \text{ mg}} \times \frac{1 \text{ mg}}{1000 \text{ mcg}} \times \frac{5.2 \text{ mcg}}{1 \text{ kg/min}} \times \frac{1 \text{ kg}}{2.2 \text{ lbs}} \times \frac{180 \text{ lbs}}{1 \text{ hr}} \]

3. a. \[ \frac{450 \text{ mg}}{\text{day}} = \frac{30 \text{ mg}}{\text{kg/day}} \times \frac{15 \text{ kg}}{1} \]
    b. No, the patient has been ordered 800mg/day

4. \[ \frac{2 \text{ mL}}{\text{dose}} = \frac{10 \text{ mL}}{5 \text{ mg}} \times \frac{1 \text{ mg}}{\text{dose}} \]

5. \[ \frac{4 \text{ mL}}{\text{day}} = \frac{10 \text{ mL}}{5 \text{ mg}} \times \frac{1 \text{ mg}}{\text{dose}} \times \frac{2 \text{ doses}}{\text{day}} \]

6. \[ \frac{426 \text{ mg}}{\text{dose}} = \frac{50 \text{ mg}}{\text{kg/day}} \times \frac{1 \text{ kg}}{2.2 \text{ lbs}} \times \frac{75 \text{ lbs}}{1 \text{ day}} \times \frac{1}{4 \text{ doses}} \]

7. \[ \frac{4.9 \text{ mcg}}{\text{kg/min}} = \frac{1000 \text{ mcg}}{\text{mg}} \times \frac{500 \text{ mg}}{1 \text{ mL}} \times \frac{1 \text{ mL}}{60 \text{ gtt/min}} \times \frac{1}{85 \text{ kg}} \]

8. \[ \frac{3.5 \text{ mL}}{\text{dose}} = \frac{1 \text{ mL}}{100 \text{ units}} \times \frac{350 \text{ units}}{\text{dose}} \]

9. \[ \frac{227 \text{ mg}}{\text{dose}} = \frac{25 \text{ mg}}{\text{kg/day}} \times \frac{1 \text{ kg}}{2.2 \text{ lbs}} \times \frac{80 \text{ lbs}}{1 \text{ day}} \times \frac{1}{4 \text{ dose}} \]

10. \[ \frac{20 \text{ mL}}{\text{dose}} = \frac{5 \text{ mL}}{\text{mg}} \times \frac{4 \text{ mg}}{\text{dose}} \]

11. \[ \frac{1181.8 \text{ units}}{\text{hr}} = \frac{20 \text{ units}}{\text{kg/hr}} \times \frac{1 \text{ kg}}{2.2 \text{ lbs}} \times \frac{130 \text{ lbs}}{1} \]

12. \[ \frac{50 \text{ gtt/min}}{\text{min}} = \frac{15 \text{ gtt}}{\text{mL}} \times \frac{100 \text{ mL}}{30 \text{ min}} \]
13. \( \frac{0.005}{\text{mg}} \frac{\text{kg}}{\text{min}} = \frac{200\text{mg}}{250\text{mL}} \frac{1\text{ml}}{60\text{gtts}} \frac{23\text{gtts}}{\text{min}} \frac{2.2\text{lbs}}{\text{kg}} \frac{1}{132\text{lbs}} \)

14. \( \frac{1.5}{\text{mg}} \frac{\text{kg}}{\text{hr}} = \frac{2000\text{mg}}{1000\text{mL}} \frac{1\text{ml}}{15\text{gtts}} \frac{60\text{min}}{\text{hr}} \frac{2.2\text{lbs}}{\text{kg}} \frac{1}{140\text{lbs}} \)

15. \( \frac{0.5}{\text{mcg}} \frac{\text{kg}}{\text{min}} = \frac{100\text{mcg}}{\text{mL}} \frac{17\text{mL}}{\text{hr}} \frac{60\text{min}}{\text{kg}} \frac{2.2\text{lbs}}{125\text{lbs}} \)

16. \( \frac{29}{\text{gtts}} \frac{\text{min}}{\text{ml}} = \frac{10\text{gtts}}{\text{ml}} \frac{700\text{mL}}{4\text{hr}} \frac{60\text{min}}{\text{kg}} \frac{2.2\text{lbs}}{125\text{lbs}} \)

17. \( \frac{36}{\text{gtts}} \frac{\text{min}}{\text{ml}} = \frac{1\text{min}}{50\text{gtts}} \frac{15\text{gtts}}{\text{ml}} \frac{120\text{mL}}{1} \)

18. \( \frac{60}{\text{gtts}} \frac{\text{min}}{\text{ml}} = \frac{60\text{gtts}}{\text{ml}} \frac{20\text{mL}}{20\text{min}} \)

19. \( \frac{0.1}{\text{mg}} \frac{\text{dose}}{\text{mg}} = \frac{1\text{mg}}{1000\text{mcg}} \frac{2\text{mcg}}{\text{kg}} \frac{114\text{lbs}}{2.2\text{lbs}} \frac{1}{1} \)

20. \( \frac{2}{\text{tabs}} \frac{\text{dose}}{\text{g}} = \frac{\text{tab}}{25\text{mg}} \frac{1000\text{mg}}{\text{g}} \frac{0.05\text{g}}{\text{dose}} \)

21. a. \( \frac{0.2}{\text{mg}} \frac{\text{kg}}{\text{dose}} = \frac{4\text{mg}}{\text{dose}} \frac{1}{20\text{kg}} \)

OR

1.6 \( \frac{\text{mg}}{\text{dose}} = \frac{0.08\text{mg}}{20\text{kg}} \frac{20\text{kg}}{1} \) to \( 4 \frac{\text{mg}}{\text{dose}} = \frac{0.2\text{mg}}{20\text{kg}} \frac{20\text{kg}}{1} \)

b. Yes