

Pedi Calculation Practice Problems

9. The recommended range for a medication is 200 to 400 mg/kg/day in 4 to 6 divided doses. The patient is 8 kg. Which of the following doses are within the recommended range?  
 $200 \times 8 = 1600$       $400 \times 8 = 3200$
- A. 1600 mg every 6 hours = 4 doses  $\frac{6400}{4}$   
 B. 600 mg every 4 hours = 6 doses  $\frac{3600}{6}$   
 C. 500 mg every 6 hours = 4 doses  $\frac{2000}{4}$   
 D. 800 mg every 4 hours = 6 doses  $\frac{4800}{6}$
10. The nurse receives an order to administer 150 mL of normal saline over 2 hours. The nurse should administer the normal saline bolus at how many milliliters per hour via an IV pump?  $\boxed{75}$
11. The nurse is to administer 200 mg of acetaminophen elixir PO. The nurse has acetaminophen 120 mg/5 mL available. How many milliliters should the nurse draw up in the PO syringe? (round to the nearest tenth)  $8.3 \text{ mL}$
12. Medication order: 20 mg of a medication by mouth tid =  $60 \text{ mg}$   
 Patient weight: 132 pounds  $60.4 \text{ kg}$   
 Recommended dose range: 1 to 3 mg/kg/day  $60.4 - 181.2$   
 Is this a safe medication order?  $Yes$
13. A 15 kg child is to receive cefotaxime, IVPB  
 Medication Reference: Recommended Dose: Cefotaxime 50 to 180 mg/kg/24 hours in 4 or 6 equally divided doses. Which dose falls within the recommended range?  
 $750$       $2700$
- A. 100 mg every 6 hours = 4 doses  $\frac{400}{4}$   
 B. 2 gm every 6 hours = 4 doses  $\frac{8000}{4}$   
 C. 190 mg every 4 hours = 6 doses  $\frac{1140}{6}$   
 D. 750 mg every 4 hours = 6 doses  $\frac{4500}{6}$
14. The nurse is caring for a patient who has an order for 500 mg azithromycin IVPB once a day. An IVPB of 500 mg azithromycin mixed in 500 ml normal saline is in the patient's medication drawer. The IVPB is to be administered over 3 hours on an IV Pump. At what rate should the nurse administer the medication?
- A. 50 mL/hr  
 B. 167 mL/hr  
 C. 500 ml/hr  
 D. 1500 mL/hr
15. Medication order: 35 mg of a medication by mouth tid  $35 \times 3 = 105$   
 Patient weight: 99 pounds  $45 \text{ kg}$   
 Safe dose range: 2 to 4 mg/kg/day  $45 \times 2 = 90$  to  $45 \times 4 = 180$   
 Is this a safe medication order?  $Yes$

Pedi Calculation Practice Problems

1. Patient: A 20 kg child

Prescribed Medication: Administer 300 mg of erythromycin by mouth every 6 hours for 10 days.

Medication Reference:

Concentration: 200 mg/5 mL

How many milliliters will the nurse administer per dose?

7.5 mL  
Answer

$0: 300 \text{ mg} \times 6 \text{ Hours} = 1800 \text{ mg}$   
 $1800 \text{ mg} \div 200 \text{ mg} = 9 \text{ doses}$   
 $9 \text{ doses} \times 5 \text{ mL} = 45 \text{ mL}$

2. The medication order is to administer a loading dose of digoxin (Lanoxin) 15 mcg/kg. The neonate weighs 41.8 kg. Available: an ampule labeled Lanoxin 0.25 mg/mL. How many mL will you administer? (Round to the nearest tenth)

Answer: 0.1 mL

$15 \text{ mcg/kg} \times 41.8 \text{ kg} = 627 \text{ mcg}$   
 $627 \text{ mcg} \div 0.25 \text{ mg} = 2508 \text{ mL}$

$27.3 \text{ mcg} = 1 \text{ mL}$   
 $2508 \text{ mcg} = 92.3 \text{ mL}$

3. A 25 kg child is to receive cefotaxime, IVPB.

Medication Reference: Recommended Dose: Cefotaxime 50 to 180 mg/kg/24 hours in 4 or 6 equally divided doses. Which dose falls within the recommended range?

- A. 1250 mg every 6 hours = 4 doses
- B. 205 mg every 6 hours
- C. 300 mg every 4 hours = 6 doses
- D. 1125 mg every 4 hours

$50 \times 25 = 1250$   
 $180 \times 25 = 4500$

$1250 \times 4 = 5000 \text{ mg/day}$   
 $205 \times 4 = 820 \text{ mg}$   
 $300 \times 6 = 1800$   
 $1125 \times 6 = 6750$

4. The nurse is to administer 100 ml IVPB over 1 hour using IV tubing drop factor of 30 gtt/mL. The tubing should be set at \_\_\_ drops per minute?

50

$\frac{\text{mL to infuse} \times \text{drop factor (gtt/mL)}}{\text{time (minutes)}}$

$\frac{100 \times 30}{60 \text{ mins}} = 50$

5. Patient: An 20-kg child

Prescribed Medication: 8 ml of acetaminophen and codeine elixir, PO, for pain

Concentration of elixir: 120 mg acetaminophen and 12 mg codeine per 5 mL

The child will receive how many milligrams of codeine in the 8 milliliter dose?

19.2 mg

$2.4 \text{ mg in 1 mL}$   
 $2.4 \times 8 = 19.2$

6. A 50 kg child is to receive hydroxyurea, PO, every third day.

Medication Reference:

Recommended Dose: 80 mg/kg/ every 3 days

The nurse should calculate the dose as how many milligrams every 3 days?

4,000

7. The suggested dose of tobramycin is 4 mg/kg/day to be administered every 12 hours in equally divided doses. An infant weighing 1500 g should receive how many mg/dose?

3 mg per dose

8. Patient: 15 kg child

Prescribed Medication: Acyclovir, IV, 10 mg/kg every 8 hours

The nurse should calculate the dose of acyclovir to be how many milligrams every 8 hours?

150 mg

$10 \times 15 = 150$

Pedi Dosage Calculation 2

$$10 \text{ kg} = 100 \text{ mL/kg}$$

$$10 \text{ kg} = 50 \text{ mL/kg}$$

$$> 20 \text{ kg} = 20 \text{ mL/kg}$$

- Patient weighs 12kg. Calculate the hourly maintenance fluid requirement for this patient. (Round to the nearest whole number)  $1.100 \text{ mL} \div 24 = 45.8 \rightarrow \boxed{46}$

$10 \times 100 = 1100 \text{ mL}$   
 $2 \times 50 = 100 \text{ mL}$
- Patient weighs 28kg. The physician orders state to run the fluids at twice the hourly maintenance fluid rate. What would the nurse set the pump to run at? (Round to the nearest whole number)

$10 \times 100 = 1000 \text{ mL}$   
 $10 \times 50 = 500 \text{ mL}$   
 $8 \times 20 = 160 \text{ mL}$

$1660 \div 24 = 69$   
 $69 \times 2 = \boxed{138 \text{ mL/hr}}$
- The adolescent weighs 57kg. How much fluid should this patient get in a 24-hour day? What is the hourly rate to be set at? (Round to the nearest whole number)

$10 \times 100 = 1000$   
 $10 \times 50 = 500$   
 $10 \times 20 = 200$   
 $10 \times 20 = 200$   
 $10 \times 10 = 100$

$7 \times 20 = 140$   
 $2.240 \div 24 = \boxed{93 \text{ mL}}$
- Administer IV fluids at two times the maintenance fluid requirement. The patient weighs 17 kg. The nurse will set the IV pump at how many milliliters per hour? (Round answer to the nearest whole number.)

$10 \times 100 = 1000$   
 $7 \times 50 = 350$

$1.350$   
 $36.25 \times 2 = \boxed{73 \text{ mL}}$
- The nurse receives an order to administer 200 mL of normal saline over 2 hours. The nurse should administer the normal saline bolus at how many milliliters per hour via an IV pump?

$\boxed{100 \text{ mL per hour}}$
- The nurse is to administer 180 mg of acetaminophen elixir PO. The nurse has acetaminophen 120 mg/5 mL available. How many milliliters should the nurse draw up in the PO syringe? 7.5

$0: 180 \text{ mg}$   
 $1: 120 \text{ per 5 mL}$

$24 \text{ per 1 mL}$
- The nurse is to administer Ampicillin 125 mg mixed in 8 milliliters of NS through an IV pump over 20 minutes. The nurse should set the pump at how many milliliters per hour.

$\text{mL/hr} = (\text{total mL} \div \text{time}) \times 60$

$\frac{8}{20} \times 60 = \boxed{24 \text{ mL per hour}}$
- Prescribed Medication: 640 mg meropenem, IVPB every 8 hours for a 16 kg child

Label on IVPB: Meropenem 640 mg in 25 ml normal saline.

Medication Reference *recommended dose (mg) = wt x mg/kg*

Recommended Dose: 40 mg/kg every 8 hours  $\boxed{640}$

The most appropriate nursing action is to do which of the following?

  - Contact the pharmacist
  - Contact the charge nurse
  - Administer the medication
  - Contact the primary care provider

Pedi Dosage Calculation 2

9. Patient: 10 kg infant  
Prescribed Medication: Administer 7 mg of ketorolac tromethamine, IV, every 6 hours  
Medication Reference  
Recommended Dose:  $0.5 \text{ mg/kg/dose every 6 hours} = 5 \text{ mg/kg}$   
Concentration Stated On The Ketorolac Vial: 15 mg/mL  
What should the nurse do?  
a) administer 0.46 mL.  
b) administer 0.5 mL.  
c) contact the primary care provider regarding a dose below the recommended range.  
d) contact the primary care provider regarding a dose above the recommended range.

10. Medication order: 20 mg of a medication by mouth tid  $20 \times 3 = 60$   
Patient weight: 132 pounds = 60 kg  
Recommended dose range: 1 to 3 mg/kg/day  $60 - 180$   
Is this a safe medication order?

11. Patient: A 16 kg child  
Prescribed Medication: Administer 150 mg of erythromycin by mouth every 6 hours for 10 days  
Medication Reference  
Recommended Dose: 30 to 50 mg/kg/day divided every 6 hours  $16 \times 30 = 480$  to  $800$   
Concentration: 200 mg/5 mL  $40 \text{ per mL}$   
How many milliliters will the nurse administer per dose?  
A. 3 mL  
B. 3.75 mL  
C. 5 mL  
D. 7.5 mL

12. Medication order: 35 mg of a medication by mouth tid  
Patient weight: 99 pounds  $44.722 = 45$   
Safe dose range: 2 to 4 mg/kg/day  $2 \times 45 = 90$  to  $4 \times 45 = 180$   
Is this a safe medication order?

13. A 15 kg child is to receive cefotaxime, IVPB  
Medication Reference:  
Recommended Dose: Cefotaxime 50 to 180 mg/kg/24 hours in 4 or 6 equally divided doses.  
Which dose falls within the recommended range?  $15 \times 50 = 750$  to  $2700$   
A. 100 mg every 6 hours. 4 doses  
B. 2 gm every 6 hours. 4 doses  
C. 190 mg every 4 hours. 6 doses  
D. 750 mg every 4 hours. 6 doses

Pedi Dosage Calculation 2

14. The nurse is caring for a patient who has an order for 500 mg azithromycin IVPB once a day. An IVPB of 500 mg azithromycin mixed in 500 ml normal saline is in the patient's medication drawer. The IVPB is to be administered over 3 hours on an IV Pump. At what rate should the nurse administer the medication?
- A. 50 mL/hr
  - B. 167 mL/hr
  - C. 500 mL/hr
  - D. 1500 mL/hr

15. The medication order is to administer naloxone (Narcan) 1.5 mcg/kg STAT. The child weighs 36.3 pounds. How many mg of Narcan will the nurse give to the child?  $16.5 \text{ kg}$   $1.5 \times 16.5$   
 The prescribed medication is lansoprazole, 30 mg, IVPB.

Medication Reference

Dilution: Each 30 mg dose must be diluted in 50 mL of normal saline

Rate of Administration: A 30 mg dose is to be evenly distributed over 30 minutes.

The nurse will administer the medication at how many milliliters per hour on an IV Pump?

- A. 30
- B. 50
- C. 60
- D. 100

16. The prescribed medication is lansoprazole, 30 mg, IVPB.

Medication Reference

Dilution: Each 30 mg dose must be diluted in 50 mL of normal saline

Rate of Administration: A 30 mg dose is to be evenly distributed over 30 minutes.  $50 \text{ mL in } 30$

The nurse will administer the medication at how many milliliters per hour on an IV Pump?

- A. 30
- B. 50
- C. 60
- D. 100

$$V = 50 \text{ mL}$$

$$T = 30 \text{ min} = 0.5 \text{ hr}$$

$$\text{mL/hr} = 50 \div 0.5 = 100 \text{ mL/hr}$$

17. The nurse is to administer 50ml IVPB over 1 hour using IV tubing drop factor of 30 gtt/mL. The tubing should be set at \_\_\_ drops per minute? (Round answer to the nearest whole number.)

- A. 10
- B. 25
- C. 50
- D. 100

$$\frac{\text{mL} \times (\text{gtt/mL})}{\text{minutes}} = \frac{50 \times 30}{60} = 25$$