B. A 16 kg male is hospitalized following surgery. Calculate the maintenance IV rate:

\[
16 \text{ kg} = 10 \text{ kg} + 6 \text{ kg} \\
[100 \text{ mL} \times 10 \text{ kg}] + [50 \text{ mL} \times 6] = \\
1000 \text{ mL} + 300 \text{ mL} = \\
\text{Answer: } 1300 \text{ mL/24 hours or } \\
54.16 \text{ mL/hr} = 54.2 \text{ mL/hr}
\]

Practice Questions

1. Round to the nearest tenth: 2.35 = ___
2. 10 kg = ______ lb
3. 4.6 lb = ______ kg
4. 3.523 kg = ______ g
5. 1586 g = ______ kg
6. An IV medication is to be given every 8 hours. You gave the first dose at 0700. When is the next dose given?
7. A 3-year-old child who is 27 lbs is to receive Amoxicillin 180 mg every 8 hours by mouth. The safe dose recommendation is 20 mg/kg/day in divided doses every 8 hours. You should
   a. Hold the dose
   b. Give the dose
8. A 9 month-old infant is to receive a bolus of 0.9 normal saline 100 mLs to be infused over 6 hours. You should program the hourly rate on the pump, at: ___.
9. A 7-year-old has an order for phenobarbital 80 mg two times per day. Phenobarbital comes in a concentration of 20 mg per 5 mL. How many mLs will you give?
10. A 2-year-old weighs 11 kg. The IV D5 LR to run at _____ mL/hr. Calculate the maintenance IV rate using the standard formula for calculation.

Please note: The Children’s Medication Safety Plan Policy does not permit trailing zeroes or the lack of leading zeroes. Examples:
- 2.50 mL must be written as 2.5 mL
- .1 mL must be written as 0.1 mL

References


Dear Applicant:

Prior to hire, Children’s provides all applicants with guidelines to our required medication administration exam. This examination is used as a screening tool to ensure safe medication administration. You will need to complete a 25-item, paper-and-pencil exam and achieve a score of 88% or higher to be eligible for employment. The exam consists of the following examples:

**Simple Conversions/Ratios**

**A. Round to the nearest tenth.** Examples:

- 1.69 = 1.7
- 6.45 = 6.5
- 2.22 = 2.2

**B. Convert pounds to kilograms (round to the nearest tenth).** Example:

85 lb = _________ kg

**Known**

| Conversion 1 kg = 2.2 lb | W | X | kg |

**Answer:** X = 38.6 kg

**C. Convert kilograms to pounds (round to the nearest tenth).** Example:

32 kg = _________ lb

**Known**

| W | X | X lb |

**Answer:** X = 70.4 lb

**D. Convert kilograms to grams.** Example:

6.673 kg = __________ g

**Known**

| Conversion 1000 g = 1 kg | W | X | g |

**Answer:** X = 0.1 mL

**E. Convert grams to kilograms (round to the nearest tenth).** Example:

2356 g = ____________ kg

**Known**

| W | X | X kg |

**Answer:** X = 2.356 kg = 2.4 kg

**Safe Medication Administration**

**A.** Using a 24 hour clock/military time:

An IV medication is to be given every 6 hours, you gave the first dose at 1400, when is the next dose given?

**Answer:** 2000

**B.** A 5-year-old is to receive Acetaminophen Elixir every 4 hours as needed. The first dose was given at 1500; what time might the next dose be given?

**Answer:** 1900

**Calculation of Dosages (round to nearest tenth)**

**A.** A 6-year-old child weighing 27 kg is to receive Methylprednisolone 4 mg IV every 6 hours. The drug is available in 40 mg per mL vial. How many mL will you administer?

**Determine dose:**

**Known**

| X mL = X mL/4 mg | W | X | mL/40 mg |

**Answer:** X = 0.1 mL

**B.** A 7-year-old child is to receive a bolus of 200 mLs of IV fluid over 6 hours. What should the IV hourly rate on the pump be programmed for?

**Known**

| X hr = X mL/1 hr | W | X mL/6 hr |

**Answer:** 33.3 mL/hr = 33.3 mL/hr

**Label/Dosage Calculation (round to nearest tenth)**

**A.** You are to give Ampicillin 80 mg IV every 6 hours. The label reads that the medication when reconstituted contains 250 mg per mL. How many mLs should you administer?

**Known**

| W | X mL/1 mL :: 80 mg :: X mL |

**Answer:** X = 0.3 mL

**Calculation of IV Maintenance Dosages (round to nearest tenth)**

Use the standard formula for calculation after obtaining child’s weight in kilograms (see below):

- For children 0-10 kg, use 100 mL x child’s weight in kg in 24 hours
- For children 10.01-20 kg, use 1000 mL + additional 50 mL per kg over 10 kg in 24 hours
- For children over 20 kg, use 1500 mL + additional 20 mL per kg over 20 kg in 24 hours

**A.** A 5-year-old weighing 25 kg. Calculate the maintenance IV hourly rate.

10 kg + 10 kg + 5 kg = 25 kg

\[100 \text{ mL} \times 10 \text{ kg} + [50 \text{ mL} \times 10] + [20 \text{ mL} \times 5]\]

1000 mL + 500 mL + 100 mL = 

**Answer:** 1600 mL/24 hours = 66.66 = 66.7 mL/hr