Pediatric Med Math Practice Problems #1 Key

1. The 2-year-old weighs 12 kg. The provider orders Tylenol 160mg PO Q4hrs prn pain. The Tylenol comes in liquid form of 80mg/5mL.

        a. What volume of liquid will you give each time you administer the prescribed dose?

160 mg   x   5 mL   =   800   = 10 mL
   1   80 mg   80

        b. If the safe dose range is between 10mg/kg/dose and 15mg/kg/dose, not to exceed 5 doses in a 24-hour period, is the prescribed does a safe amount to be given in a 24-hour period?

   12 kg   12 kg   Yes
X 10 mg/kg/dose   x 15 mg/kg/dose
 120 mg/kg/dose   180 mg/kg/dose

2. A 17-year-old weighing 150lbs has an order for Norco 5/325 1 tablet PO Q4hours Prn pain. If he takes this dose every 4 hours as prescribed, what is the total amount of Acetaminophen he will take in a 24-hour period?

325 mg   x   6 doses   = 1950 mg/day
1 dose   1 day

3. An 13 month old infant weighs 8kg, has an order for Augmentin 125mg PO Q8hrs. The safe dose range is 20-40 mg/kg/24 hours.

        a. Calculate the safe dose for this child.

   8 kg   8 kg
X 20 mg/kg/24h   x 40 mg/kg/24h
160 mg/24h   320 mg/24h

        b. What is the total amount to be given in 24 hours?

125 mg   x   3 dose   =   375 mg/day
1 dose   1 day

        c. Is the dosage ordered a safe dose for this child?

No

4. A 3-year-old child weighing 13kg is ordered Theophylline 65mg Q 6 hours via his G-tube. The safe dosage is 22mg/kg/24hours. The bottle is labeled 80mg/15mL.

a. Calculate the safe dosage for this child.

13 kg
X 22 mg/kg/24h
286 mg/24h

b. Is the dose ordered safe for this child?

65 mg   x   4 doses   = 260 mg/day
1 dose   1 day

c. How much of the solution should the nurse draw up to be given for each dose (round up to the nearest whole mL)?

65 mg   x   15 mL   =   975   = 12.18 mL = 12 mL
  1   80 mg   80

5. A 2 month old weighs 16.5 lbs. He has Famotidine oral suspension ordered at 0.5mg/kg once daily. The oral suspension contains 40mg/5mL.

a. What is the dose to be given?

16.5 lbs   x   1 kg   x   0.5 mg   = 8.25   = 3.75 mg
   1   2.2 lbs   1 kg   2.2

b. What is the amount to be given (round to the nearest tenth)?

3.75 mg   x   5 mL   =   18.75   = 0.46mL = 0.5 mL
   1   40 mg   40

6. Calculate the BSA for adolescent who weighs 142 lbs and is 4 feet 10 inches

142 lbs x   1 kg   = 64.545 kg
             2.2 lbs

58 in   x 2.54 cm   = 147.32 cm
          1 in

$$\sqrt{\frac{64.545\,kg \; x \; 147.32\,cm}{3600}} = 1.63 \text{ m}^2$$

7. Calculate the BSA for a child who weighs 13.6 kg and is 90 cm.

$$\sqrt{\frac{13.6\,kg \; x \; 90\,cm}{3600}} = 0.58 \text{ m}^2$$

8. A child is to receive dactinomycin 2.5 mg/m2 IVP daily for 5 days as treatment for leukemia. The child weighs 48 lbs and is 4 feet 6 inches tall.

a. Calculate the BSA for this child.

48 lbs   x   <u>1 kg</u>   = 21.818 kg
       2.2 lbs

54 in x <u>2.54 cm</u> = 137.16 cm
      1 in

$$\sqrt{\frac{21.818\,kg \; x \; 137.16\,cm}{3600}} = 0.91 \text{ m}^2$$

b. Calculate the dose of dactinomycin to be given each day. (Round to the nearest tenth.)

0.91 m^2 x <u>2.5 mg</u> = 2.275 mg ≈ 2.3 mg
       M^2

9. Calculate the daily fluid volume for a 6 kg child.

100ml/kg x 6 kg = 600ml/day

10. Calculate the daily fluid volume for a 44 pound child.

44 lbs x <u>1 kg</u> = 20 kg
     2.2 lbs
1000 ml + 10 kg (50 mL/kg) = 1500 mL