Pediatric Med Math Practice Quiz #1 Key

Show your calculations

1. A 2-year-old weighs 12 kg. The provider orders acetaminophen 160 mg PO q4 hours PRN for pain. Acetaminophen comes in liquid form of 80 mg/5 mL.
   a. What volume of liquid will you give each time you administer the prescribed dose?
   $\frac{160}{80} * 5 \rightarrow 2(5) = 10\,mL$
   b. If the safe dose range is between 10-15 mg/kg/dose. Is the prescribed does a safe amount to be given in a 24-hour period?
   $10(12) = 120\,mg/dose$
   $15(12) = 180\,mg/dose$
   Answer: YES. The order of 160 mg falls within the safe dosage range of 120-180 mg/dose.

2. A 13-month-old infant weighs 8 kg and is ordered Augmentin 125 mg PO TID. The safe dosage range is 20-40 mg/kg/24 hours.
   a. Calculate the daily safe range for this child.
   $8(20) = 160\,mg/day$
   $8(40) = 320\,mg/day$
   RANGE: 160-320 mg/day
   b. Based on the current order, what is the total amount of Augmentin in mg given in 24 hours?
   $125(3) = 375\,mg/day$
   c. Calculate the safe range/dose
   $160/3 = 53.33\,mg/dose$
   $320/3 = 106.67\,mg/dose$
   mg/dose Range: 53.33-106.67 mg/dose
   d. Is the ordered dosage safe for this child?
   NO. 375 mg/day >320 mg/day

3. A 3-year-old child weighs 13 kg and is ordered Theophylline 65 mg QID via G-tube. The safe dosage is 22 mg/kg/day. The bottle is labeled 80 mg/15 mL.
   a. Calculate the safe dosage for this child
   $22(13) = 286\,mg/day$

b. What is the daily dose of Theophylline the child will receive?
$65(4)=260\,mg/day$

c. How much of the solution should the nurse draw up to be given for each dose? Round to the nearest whole mL
$\frac{65}{80}*15=12.1875 \rightarrow 12\,mL$

4. A 2 month old weighs 16 lbs. They have Famotidine oral suspension ordered at 0.5 mg/kg once daily. The oral suspension contains 40 mg/5 mL.
   a. How many mg will be administered per dose? Round to the nearest hundredth
   $16\,lbs/2.2=7.27272727\,kg$
   $0.5(7.27272727)=3.6363636364\,mg \rightarrow 3.64\,mg$

   b. How many mL will be administered per dose? Round to the nearest hundredth.
   $\frac{3.64}{40}*5=0.455\,mL \rightarrow 0.46\,mL$

5. Calculate the BSA for adolescent who weighs 142 lbs. and is 4 feet 10 inches tall. Round to the nearest hundredth.
   a. $\frac{142}{2.2}=64.545454545\,kg$

   b. $4(12)=48\,inches$

   c. $48(2.54)+10(2.54)=147.32\,cm$

   d. $\sqrt{147.32(64.5454545)}$

   e. $\sqrt{\frac{9{,}508.8362}{3600}}$

   f. $\sqrt{2.6413433}$

   g. ¿1.625221

   h. $1.63\,m2$

6. Calculate the BSA for a child who weighs 13.6 kg and is 90 cm tall.
   a. $\sqrt{13.6(90)}$

b. $\sqrt{\frac{1224}{3600}}$

c. $\sqrt{0.34}$

d. ¿$0.5830951\,m2$

e. $0.58\,m2$

7. Calculate the daily fluid volume for a 6 kg child.
   Formula: 3.5-10 kg= 100 mL/kg
   $6(100\,mL)=600\,mL/day$

8. Calculate the daily fluid volume for a 44-pound child.
   a. $\frac{44}{2.2}=20\,kg$
   b. Formula: 11-20 kg = 1000 mL + 50 mL/kg for every kg over 10
   c. $1000\,mL+50(20-10)$
   d. $1000\,mL+50(10)$
   e. $1000\,mL+500=1500\,mL/day$

9. Calculate the daily fluid volume for a child weighing 28 kg
   a. Formula: >20 kg= 1500 mL + 20 mL/kg over 20 kg
   b. $1500\,mL+20(28-20)$
   c. $1500\,mL+20(8)$
   d. $1500\,mL+160=1{,}660\,mL/day$