**Formulas**

Read the following instructions in order to complete this discussion, and review the [example](http://vizedhtmlcontent.next.ecollege.com/pub/content/aa84bc37-7f15-4e1a-add5-84baf5ef1299/MAT221.W2.DiscussionExample.pdf%22%20%5Ct%20%22_new) of how to complete the math required for this assignment:

* Read about Cowling’s Rule for child sized doses of medication (number 92 on page 119 of *Elementary and Intermediate Algebra*).
* Solve parts (a) and (b) of the problem using the following details indicated for the first letter of your last name:

|  |  |  |
| --- | --- | --- |
| If your ***last name***starts with letter | *For part (a) of problem 92 use this information to calculate the child’s dose.* | *For part (b) of problem 92 use this information to calculate the child’s age.* |
| Y or B | adult dose 400mg ibuprofen; 2 year old child | 400mg adult, 50mg child |

* Explain what the variables in the formula represent and show all steps in the computations.
* Incorporate the following five math vocabulary words into your discussion. Use **bold**font to emphasize the words in your writing (**Do not write definitions for the words; use them appropriately in sentences describing your math work**.):
	+ Literal equation
	+ Formula
	+ Solve
	+ Substitute
	+ Conditional equation

This week’s discussion is requiring us to use Cowling’s Rule. This rule uses a **Formula** that allows a person to determine the proper dosage of medication to a child based on the adult dosage and childs age. Inaddition to this **formula**, a **Literal Equations** will be used, which has two or more variables being used in this equation. Provided below are the variables and formula that will be used to determing the childs dossage and age.

**Part A:**

Cowling’s Formula:

d = child’s dose, D = Adult dose, a = child’s age,

d = D (a + 1)

 24

For this problem, I was givne an adult dose of 400mg ibuprofen, with the child being 2 years of age.

d = 400 (2 + 1) I **substituted** 400 for D and 2 for variable a

 24

d = 400(3) First step is to find the sum in the parenthesis, next step is to

 24 multiply the top two numbers together.

d = 1200 Last step is division which will **solve** for variable d.

 24

d = 50mg Correct dosage of ibuprofen for a child of this age is 50mg.

**Part B:**

For the second part of this discussion, we need to figure out the child’s age based on the amount of ibuprofen given. We will use the same formula used above. However, we will use an additional variable (d = child’s dose) to solve for a = child’s age.

Cowling’s Formula:

d = child’s dose, D = Adult dose, a = child’s age,

d = D (a + 1)

 24

50 = 400 (a + 1) I have substituted 50 for variable d, and 400 for variable D.

 24

Since both variables were substituted this now becomes a **conditional** equation since there is only one answer.

50(24) = 400 (a + 1) (~~24~~) First step - remove the denominator (24) by multiplying

 ~~24~~ both sides.

1200 = 400 (a + 1) Second step – divide both sides by 400.

 400 400

3 – 1 = a + 1 – 1 Next step is to isolate the variable. We will subtract 1 frome each side.

2 = a 50mg of ibprophen will be given to a 2 year old child.