**Lower Elementary:**

*Question:* Start with 10. Double it. Subtract 8. Double the number again. Subtract 14. Take away half. What is the new number?

**Upper Elementary:**

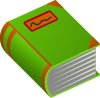
*Question:* Twenty-three kids split into teams to go on a scavenger hunt. How many kids are on each team if the kids split up into exactly 7 teams as evenly as possible?

****

**Middle School:**

*Question:* Write a set of parentheses around two numbers in the equation below to make it true.

5 + 3 × 4 2 ÷ 12 – 7 = 10

**Algebra and Up:**

*Question:* After a 15% discount and 6% sales tax, a book costs $27.03. What is the book’s sticker price?

**Lower Elementary:**

*Question:* Start with 10. Double it. Subtract 8. Double the number again. Subtract 14. Take away half. What is the new number?

*Answer:* 5

*Solution:* Ten doubled is 20. Eight subtracted from 20 makes 12. Twelve doubled is 24. Twenty-four minus 14 is 10. Ten with half taken away is 5.

**Upper Elementary:**

*Question:* Twenty-three kids split into teams to go on a scavenger hunt. How many kids are on each team if the kids split up into exactly 7 teams as evenly as possible?

*Answer:* 5 teams of 3 and 2 teams of 4

*Solution:* When we split into groups, we divide. Twenty-three divided among 7 groups is 3 R2. Since we can’t have two-thirds of a child on each team, we can reason that each team gets 3 kids, then the remaining 2 are added onto different teams. So, there are 2 teams with 4 kids, and the other 5 teams have 3 kids each.

****

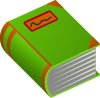
**Middle School:**

*Question:* Write a set of parentheses around two numbers in the equation below to make it true.

5 + 3 × 4 2 ÷ 12 – 7 = 10

*Answer:* 5 + ( 3 × 4 ) 2 ÷ 12 – 7 = 10

*Solution:* When we put the parentheses around 3 × 4, we multiply before we square. We get 5 + 122 ÷ 12 – 7. After that, we square 12 and get 5 + 144 ÷ 12 – 7. Then we divide and get 5 + 12 – 7. Finally, we can add and subtract: 5 + 12 – 7 = 10.

**Algebra and Up:**

*Question:* After a 15% discount and 6% sales tax, a book costs $27.03. What is the book’s sticker price?

*Answer:* $30.00

*Solution:* First, we undo the tax. When the book was taxed, its value was multiplied by 1.06. So, we divide: $27.03 ÷ 1.06 = $25.50. Now, we undo the discount. When the discount was applied, the value of the book was multiplied by 1 – 0.15 = 0.85. So, we want to divide again: $25.50 ÷ 0.85 = $30.00. The book’s sticker price is $30.00.