**Lower Elementary:**

*Question:* Tim has twice as many sheets of paper in his binder as Lynn. Lynn has twice as many sheets of paper in her binder as Sophie. If Sophie has 19 sheets of paper, how many sheets of paper does Tim have?

**Upper Elementary:**

*Question:* The menu at the cafeteria for lunch has 3 fruit options, 2 vegetable options, 4 sandwich options, and either milk or water to drink. How many possible meal combinations are there?

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**Middle School:**

*Question:* What number(s) between 150 and 175 is divisible by 2, 3, and 9?

**Algebra and Up:**

*Question:* After a 20% discount and a 10% tax, a pair of pants costs $39.60. What is the original cost?

**Lower Elementary:**

*Question:* Tim has twice as many sheets of paper in his binder as Lynn. Lynn has twice as many sheets of paper in her binder as Sophie. If Sophie has 19 sheets of paper, how many sheets of paper does Tim have?

*Answer:* 76 sheets of paper

*Solution:* Lynn has twice as many sheets of paper as Sophie. 19 doubled = 10 doubled + 9 doubled = 20 + 18 = 38. Lynn has 38 sheets of paper. Tim has twice as many sheets of paper as Lynn. 38 doubled = 30 doubled + 8 doubled = 60 + 16 = 76. Tim has 76 sheets of paper.

**Upper Elementary:**

*Question:* The menu at the cafeteria for lunch has 3 fruit options, 2 vegetable options, 4 sandwich options, and either milk or water to drink. How many possible meal combinations are there?

*Answer:* 48 possible meals

*Solution:* To find the number of possible meals, we multiply the number of options for each component of the meal. With 3 fruit options, 2 vegetable options, 4 sandwich options and 2 drink options, there are 3 × 2 × 4 × 2 = 48 possible meal combinations.

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**Middle School:**

*Question:* What number(s) between 150 and 175 is divisible by 2, 3, and 9?

*Answer:* 162

*Solution:* A number that is divisible by 2 is even. Between 150 and 175, the even numbers are 152, 154, 156, 158, 160, 162, 164, 166, 168, 170, 172, and 174. A number that is divisible by 9 is also divisible by 3, so we only have to check divisibility by 9. A number is divisible by 9 is the sum of the digits is divisible by 9. The only number in the list that is divisible by 9 is 162 (since 1 + 6 + 2 = 9 which is divisible by 9).

**Algebra and Up:**

*Question:* After a 20% discount and a 10% tax, a pair of pants costs $39.60. What is the original cost?

*Answer:* $45

*Solution:* First, we need to find the discounted price before tax. A 10% tax means that the price before tax is 110% of the discounted price. 110% of what number is 39.60? If d is the discount price, then we have 1.1d = 39.60. Divide both sides by 1.1, we have that d = 36. The discounted price of the pants is $36. Now we need to find the original price before the discount. A 20% discount means that the price before the discount is 80% of the original price. 80% of what number is 36? If p is the original price, then we have 0.8p = 36. Divide both sides by 0.8, we have that p = 45. So the original price of the pants is $45.