**Lower Elementary:**

*Question:* It takes 5 batteries to power 1 flashlight. It takes 4 batteries to power 1 radio. Which of the following requires more batteries: 3 flashlights and 2 radios ***or*** 4 flashlights and 1 radio?

**Upper Elementary:**

*Question:* Brandon finds 4 pounds and 8 ounces of wood for a campfire. Emma finds 5 pounds and 11 ounces. Luis finds 9 pounds and 3 ounces. How much campfire do they have in total?

**Middle School:**

*Question:* An unroasted marshmallow has a volume of 0.25π cubic inches. After Andrew roasts the marshmallow over a campfire, its volume is 150% its original volume. What is the post-roast volume of the marshmallow?

**Algebra and Up:**

*Question:* A triangular prism-shaped tent has a rectangular base that is 6 feet wide and 8 feet long. The isosceles triangular sides have bases that are 6 feet wide and edges that are 5 feet in length. If all the walls of the tent are pulled perfectly flat, then what is the volume of the tent?

**Lower Elementary:**

*Question:* It takes 5 batteries to power 1 flashlight. It takes 4 batteries to power 1 radio. Which of the following requires more batteries: 3 flashlights and 2 radios ***or*** 4 flashlights and 1 radio?

*Answer:* 4 flashlights and 1 radio

*Solution:* For the first option: 3 flashlights use 5 + 5 + 5 = 15 batteries, and 2 radios use 4 + 4 = 8 batteries. That’s 15 + 8 = 23 batteries in total. For the second option: 4 flashlights use 5 + 5 + 5 + 5 = 20 batteries, and 1 radio uses 4 batteries. That’s 24 batteries in total. Since 24 is more than 23, the second option requires more batteries.

**Upper Elementary:**

*Question:* Brandon finds 4 pounds and 8 ounces of wood for a campfire. Emma finds 5 pounds and 11 ounces. Luis finds 9 pounds and 3 ounces. How much campfire do they have in total?

*Answer:* 19 pounds and 6 ounces

*Solution:* First, let’s add the ounces: 8 + 11 + 3 = 22 ounces. Since there are 16 ounces in a pound, that’s the same as 1 pound and 6 ounces. Now, if we add the pounds, we get 4 + 5 + 9 = 18 pounds, plus 1 pound and 6 ounces makes 19 pounds and 6 ounces.

**Middle School:**

*Question:* An unroasted marshmallow has a volume of 0.25π cubic inches. After Andrew roasts the marshmallow over a campfire, its volume is 150% its original volume. What is the post-roast volume of the marshmallow?

*Answer:* 0.375π cubic inches

*Solution:* To find 150% of 0.25π, we can multiply the 1.5 by 0.25 and then by π: 1.5 multiplied by 0.25 is 0.375, and 0.375 multiplied by π is 0.375π. So, the volume of the roasted marshmallow is 0.375π cubic inches.

**Algebra and Up:**

*Question:* A triangular prism-shaped tent has a rectangular base that is 6 feet wide and 8 feet long. The isosceles triangular sides have bases that are 6 feet wide and edges that are 5 feet in length. If all the walls of the tent are pulled perfectly flat, then what is the volume of the tent?

*Answer:* 96 cubic feet

*Solution:* We’re missing the height of the tent. To find it, we can take a right triangular half of an isosceles triangular side of the tent. One leg is half of 6 feet, so 3 feet, and the hypotenuse is 5 feet, so the other leg---the height of the tent---is 4 feet. So, the area of that face of the tent is 0.5 × 6 × 4 = 12 square feet. The length of the tent is 8 feet, so its total volume is 12 × 8 = 96 cubic feet.