**Lower Elementary:**

*Question:* A clown makes 10 balloon giraffes, 16 balloon poodles, 5 balloon monkeys, and a balloon octopus. How many balloon animals does the clown make?

**Upper Elementary:**

*Question:* A spinning prize wheel has four different varieties of prizes. 20% of the prizes are items from a prize case. 30% of the prizes are tickets to local events and museums. 40% of the prizes are cash. The other 2 prizes are all-expense-paid trips. How many different prizes are on the wheel?

**Middle School:**

*Question:* A dunk tank is 4/5 full. After Tom gets dunked, 1/4 of the water splashes out. After that, there are 450 gallons of water left. How many gallons of water does the dunk tank hold when it’s full?

**Algebra and Up:**

*Question:* The paper cone of a snowcone is 5 inches deep and 3 inches wide at its opening. If the cone is filled to the top with snow and then a perfect hemisphere of snow is placed on top, what is the volume of the snow in cubic inches?

**Lower Elementary:**

*Question:* A clown makes 10 balloon giraffes, 16 balloon poodles, 5 balloon monkeys, and a balloon octopus. How many balloon animals does the clown make?

*Answer:* 32

*Solution:* Let’s add the animals together, one species at a time. There are 10 giraffes and 16 poodles, and 10 + 16 = 26. To add the 5 monkeys, we can count 4 up to 30 and 1 more up to 31. One more animal—the octopus—makes 32!

**Upper Elementary:**

*Question:* A spinning prize wheel has four different varieties of prizes. 20% of the prizes are items from a prize case. 30% of the prizes are tickets to local events and museums. 40% of the prizes are cash. The other 2 prizes are all-expense-paid trips. How many different prizes are on the wheel?

*Answer:* 20

*Solution:* First we need to know what percentage of the prizes are all-expense-paid trips. The rest of the prizes add up to 20% + 30% + 40% = 90%, so the other 10% of the prizes are all-expense-paid trips. If 2 is 10% of the total, and 10% × 10 = 100%, then the total number of prize options is 2 × 10 = 20.

**Middle School:**

*Question:* A dunk tank is 4/5 full. After Tom gets dunked, 1/4 of the water splashes out. After that, there are 450 gallons of water left. How many gallons of water does the dunk tank hold when it’s full?

*Answer:* 750 gallons

*Solution:* If 1/4 of the water in a 4/5–full tank leaks out, then the tank is now 3/5 full. If 450 gallons makes up 3/5 of the tank’s capacity, then 1/5 of it must be 450 ÷ 3 = 150 gallons. 150 gallons, 5 times makes 5/5 of the tank’s capacity, and 150 × 5 = 750 gallons.

**Algebra and Up:**

*Question:* The paper cone of a snowcone is 5 inches deep and 3 inches wide at its opening. If the cone is filled to the top with snow and then a perfect hemisphere of snow is placed on top, what is the volume of the snow in cubic inches?

*Answer:* 6π inches3

*Solution:* The volume of the hemisphere of snow is equal to half of 4/3πr3, or 2/3πr3 (we can do this because half of 4/3 is 2/3). The volume of the cone is πr2 × h/3. We know that h = 5 and r = 1.5, so altogether, the volume of the snowcone is:

(2/3 × π × 1.53) + (π × 1.52 × 5/3)

Altogether, the above equals 2.25π + 3.75π = 6π, or approximately 18.85.