**Lower Elementary:**

*Question:* Grace, Ruby, and James volunteer to walk shelter dogs. Grace walks half as many dogs as Ruby, who walks 5 more dogs than James. James walks 9 dogs. How many dogs did Grace walk?

**Upper Elementary:**

*Question:* Spot the dog likes to bury bones in the backyard. On Friday, he buried half of his bones. On Saturday, he dug up 3/4 of the bones he buried the day before. If spot started with 72 bones on Friday, then how many bones did he dig up on Saturday?

**Middle School:**

*Question:* Daniel and his sister Chloe are training their neighbors’ dog. Daniel teaches the dog to sit and speak. Chloe teaches the dog to lie down, roll over, and fetch. They are paid for each trick they teach the dog and get a total of $80. How should they split the money?

**Algebra and Up:**

*Question:* A dog run is three times as long as it is wide. If its perimeter is 312 decimetres, what is the area of the dog run?

**Lower Elementary:**

*Question:* Grace, Ruby, and James volunteer to walk shelter dogs. Grace walks half as many dogs as Ruby, who walks 5 more dogs than James. James walks 9 dogs. How many dogs did Grace walk?

*Answer:* 7 dogs

*Solution:* If Ruby walked 5 more dogs than James, then she walked 9 + 5 = 14 dogs. Grace walked half as many as that, so she walked half of 14 = 7 dogs.

**Upper Elementary:**

*Question:* Spot the dog likes to bury bones in the backyard. On Friday, he buried half of his bones. On Saturday, he dug up 3/4 of the bones he buried the day before. If spot started with 72 bones on Friday, then how many bones did he dig up on Saturday?

*Answer:* 27 bones

*Solution:* Spot buried half of 72 = 36 bones on Friday. To find out how many bones he dug up on Saturday, first we need to find 1 quarter of 36 by finding half of a half of 36. That’s half of 18, which is 9. Since Spot dug up 3 quarters of the bones he buried, we know that he dug up 9 × 3 = 27 bones on Saturday.

**Middle School:**

*Question:* Daniel and his sister Chloe are training their neighbors’ dog. Daniel teaches the dog to sit and speak. Chloe teaches the dog to lie down, roll over, and fetch. They are paid for each trick they teach the dog and get a total of $80. How should they split the money?

*Answer:* Daniel gets $32. Chloe gets $48.

*Solution:* Daniel and Chloe together taught the dog 5 tricks, so we need to divide their earnings by 5 first. $80 ÷ 5 = $16 per trick. That means that Daniel gets $16 × 2 = $32 because he taught the dog 2 tricks, and Chloe gets the rest, $48, because she taught the dog the other 3 tricks.

**Algebra and Up:**

*Question:* A dog run is three times as long as it is wide. If its perimeter is 312 decimetres, what is the area of the dog run?

*Answer:* 4563 square decimetres

*Solution:* We can represent the relationship between the width and length of the dog run with the equation 3W = L. We also know that 2 times the width plus 2 times the length of a rectangle is its perimeter, so 2W + 2L = 312. We solve for the length and width by substituting 3W for L in the second equation, which makes 2W + 6W = 8W = 312. From there, we can find that the width is 39 dm, so the length must be 117 dm. The area is therefore 39 × 117 = 4563 square decimetres.