**Lower Elementary:**

*Question:* Kylie and Layla get on a school bus at 3:15 pm. At 3:23 pm, Layla tells Kylie that they are halfway to her house. How long does it take to get from the school to Layla’s house?

**Upper Elementary:**

*Question:* Alice is saving up for a video game that costs $45.00. She gets $20.00 every Monday in allowance, but she spends $15.00 each week on lunch at school. How many weeks will it take for Alice to save up for the video game?

**Middle School:**

*Question:* Owen can’t remember the address number of his friend’s house, but he does remember noticing that all four of the digits were even, that they were in order from least to greatest, and that the first two digits form a number with half the value as the number formed by the last two digits. How many possible street address numbers are there with the details Owen remembers?

**Algebra and Up:**

*Question:* Bailey sells 21 more chocolate bars than Carlos. Carlos sells 2.5 times as many chocolate bars as Devon. Devon sells as many chocolate bars as Ella. Ella sells a quarter as many chocolate bars as Fran. Fran sells 1 fewer chocolate bars than Ginny. Rewrite each statement into a system of equations.

**Lower Elementary:**

*Question:* Kylie and Layla get on a school bus at 3:15 pm. At 3:23 pm, Layla tells Kylie that they are halfway to her house. How long does it take to get from the school to Layla’s house?

*Answer:* 16 minutes

*Solution:* From 3:15 pm to 3:23 pm is 23 – 15 = 8 minutes. Since half of the trip from school to Layla’s house takes 8 minutes, that means that the whole trip takes that amount of time doubled. So, the whole trip from school to Layla’s house is 8 + 8 = 16 minutes.

**Upper Elementary:**

*Question:* Alice is saving up for a video game that costs $45.00. She gets $20.00 every Monday in allowance, but she spends $15.00 each week on lunch at school. How many weeks will it take for Alice to save up for the video game?

*Answer:* 9 weeks

*Solution:* Each week, Alice gets $20.00 and spends $15.00. So, she can save $20.00 – $15.00 = $5.00 per week. She needs $45.00 to buy the video game, so she can save up that amount in $45.00 ÷ $5.00 per week = 9 weeks.

**Middle School:**

*Question:* Owen can’t remember the address number of his friend’s house, but he does remember noticing that all four of the digits were even, that they were in order from least to greatest, and that the first two digits form a number with half the value as the number formed by the last two digits. How many possible street address numbers are there with the details Owen remembers?

*Answer:* 3 possible numbers: 2244, 2448, and 4488

*Solution:* Since all the digits have to be even, only 2s, 4s, and 8s can appear in the address number—6 cannot appear in the address because halving or doubling it would cause an odd digit. So, 22, 24, and 44 can all can be doubled to make a number whose digits are in the set of usable digits. That means 2244, 2448, and 4488 are the possible numbers.

**Algebra and Up:**

*Question:* Bailey sells 21 more chocolate bars than Carlos. Carlos sells 2.5 times as many chocolate bars as Devon. Devon sells as many chocolate bars as Ella. Ella sells a quarter as many chocolate bars as Fran. Fran sells 1 fewer chocolate bars than Ginny. Rewrite each statement into a system of equations.

*Answer:* ***B*** = ***C*** + 21, ***C*** = 2.5***D***, ***D*** = ***E***, ***E*** = 0.25***F***, ***F*** = ***G*** – 1

*Solution:* Bailey’s sales are equal to Carlos’s plus 21: ***B*** = ***C*** + 21. Carlos’s sales are equal to 2.5 times Devon’s: ***C*** = 2.5***D***. Devon’s sales are equal to Emma’s: ***D*** = ***E***. Emma’s sales are equal to a quarter of Fran’s sales: ***E*** = 0.25***F***. Fran’s sales are equal to Ginny’s sales minus 1: ***G*** – 1.