**Lower Elementary:**

*Question:* There are 4 houses on a hillside, each a different color. The second house from the right is blue. The second house from the left is pink. The yellow house is to the right of the green house. How many houses are between the yellow house and the pink house? What color(s)?

**Upper Elementary:**

*Question:* Abe has 4 apple trees and picks 12 apples from each. If 8 apples fit in a basket and each basket costs $0.60, then how much does Abe need to spend on enough baskets for all the apples?

**Middle School:**

*Question:* One cricket chirps once every 16 seconds. Another cricket chirps every 17 seconds. If both crickets chirp at the same time, then how long will it be before they both chirp at exactly the same time again?

**Algebra and Up:**

*Question:* The Bhattacharyya family goes to a restaurant and orders 2 grilled cheeses and 1 harvest salad for a total of $26.50. The Chung family goes to the same restaurant and orders 3 grilled cheeses and 4 harvest salads for a total of $56.00. If the Ingalls family also goes to the restaurant and orders 2 grilled cheeses and 2 harvest salads, then how much will their meal cost?

**Lower Elementary:**

*Question:* There are 4 houses on a hillside, each a different color. The second house from the right is blue. The second house from the left is pink. The yellow house is to the right of the green house. How many houses are between the yellow house and the pink house? What color(s)?

*Answer:* the blue house

*Solution:* One way to solve this problem is to draw spaces for each house and fill them in based on the clues. By doing that, we can first figure out that the pink house and the blue house are the two in the middle. Next, since we know that the yellow house is to the right of the green house, we know that the yellow house is on the far right and the green house is on the far left. So, the order of the houses from left to right is green, pink, blue, yellow. So, there is 1 house between the yellow house and the pink house—the blue house.

**Upper Elementary:**

*Question:* Abe has 4 apple trees and picks 12 apples from each. If 8 apples fit in a basket and each basket costs $0.60, then how much does Abe need to spend on enough baskets for all the apples?

*Answer:* $3.60

*Solution:* Abe picks 4 × 12 = 48 apples. So, he will need 48 ÷ 8 = 6 baskets for all the apples he picks. Since the baskets cost $0.60 each, all 6 cost $0.60 × 6 = $3.60.



**Middle School:**

*Question:* One cricket chirps once every 16 seconds. Another cricket chirps every 17 seconds. If both crickets chirp at the same time, then how long will it be before they both chirp at exactly the same time again?

*Answer:* 4 minutes and 32 seconds

*Solution:* To solve this problem, we need to find the LCM of 16 and 17. Since 16 and 17 have a difference of 1, they are mutually prime. The LCM of two mutually prime numbers is their product. So, the crickets will chirp at the exact same time every 16 × 17 = 272 seconds. Since a minute is 60 seconds, the crickets will chirp in unison again in 4 minutes and 32 seconds.

**Algebra and Up:**

*Question:* The Bhattacharyya family goes to a restaurant and orders 2 grilled cheeses and 1 harvest salad for a total of $26.50. The Chung family goes to the same restaurant and orders 3 grilled cheeses and 4 harvest salads for a total of $56.00. If the Ingalls family also goes to the restaurant and orders 2 grilled cheeses and 2 harvest salads, then how much will their meal cost?

*Answer:* $33.00

*Solution:* If we solve this problem using a system of equations in with two unknowns (2***G*** + 1***H*** = 26.5 and 2***G*** + 4***H*** = 56), we find that the cost of a grilled cheese is $10.00 and the cost of a harvest salad is $6.50. So, the cost of 2 grilled cheeses and 2 harvest salads is $10.00 × 2 + $6.50 × 2 = $33.00.