**Lower Elementary:**

*Question:* A small box contains 1 dozen cookies. A large box contains 2 dozen cookies. How many cookies are in 3 small boxes and 2 large boxes?

**Upper Elementary:**

*Question:* There are 6 oranges per kilogram on average. Each kilogram of oranges produces 150 millilitres of orange juice. If Emma picks 120 from an orange tree, how many cups of orange juice can she squeeze from them?

**Middle School:**

*Question:* Violins are measured in “fractional” sizes, which are not literal measurements of their proportions. The body of a full-size violin is 351/2 centimetres long. The body half-size violin is 32 centimetres long. By what fractional part would the body of the half size violin need to decrease in length in order to be literally half the length of a full size violin?

**Algebra and Up:**

*Question:* Rachel starts her math test at 2:05 pm. She finishes the test at 2:47 pm. How many degrees does the minute hand of the clock on the wall in Rachel’s math classroom rotate as Rachel is taking her test?

**Lower Elementary:**

*Question:* A small box contains 1 dozen cookies. A large box contains 2 dozen cookies. How many cookies are in 3 small boxes and 2 large boxes?

*Answer:* 84 cookies

*Solution:* In 3 small boxes, there are 12 + 12 + 12 = 36 cookies. In 2 large boxes, there are 24 + 24 = 48 cookies. So, in all the boxes, there are 36 + 48 = 84 cookies.

**Upper Elementary:**

*Question:* There are 6 oranges per kilogram on average. Each kilogram of oranges produces 150 millilitres of orange juice. If Emma picks 120 from an orange tree, how many cups of orange juice can she squeeze from them?

*Answer:* 12 cups

*Solution:* Since there are 6 oranges in a kilogram, 120 oranges weigh 120 ÷ 6 = 20 kilograms. Each kilogram of oranges makes 150 millilitres—or 3/5 of a cup—of orange juice. So, 20 kilograms of oranges makes 20 × 3/5 = 12 cups of orange juice.

**Middle School:**

*Question:* Violins are measured in “fractional” sizes, which are not literal measurements of their proportions. The body of a full-size violin is 351/2 centimetres long. The body half-size violin is 32 centimetres long. By what fractional part would the body of the half size violin need to decrease in length in order to be literally half the length of a full size violin?

*Answer:* 57/128

*Solution:* Half the length of the body of a full size violin is 173/4 centimetres. In order to decrease 32 centimetres to 173/4 centimetres, the half size violin would need to lose 141/4 centimetres. Since 141/4 is 57/128 of 32, the half size violin would need to decrease in length by 57/128 in order to be literally half size.

**Algebra and Up:**

*Question:* Rachel starts her math test at 2:05 pm. She finishes the test at 2:47 pm. How many degrees does the minute hand of the clock on the wall in Rachel’s math classroom rotate as Rachel is taking her test?

*Answer:* 252 degrees

*Solution:* Rachel spends 42 minutes on her math test. Since there are 360 degrees in a circle and 60 minutes on a clock, that each minute is 360 ÷ 60 = 6 degrees. So, in 42 minutes, the minute hand rotates 42 × 6 = 252 degrees.