**Lower Elementary:**

*Question:* Jack decides to paint the walls in his bedroom with colourful stripes. The first stripe in the pattern is red, then orange, then yellow, then orange, then red, then orange, then yellow, then orange, and so on. If the pattern continues, what colour will the 30th stripe be?

**Upper Elementary:**

*Question:* Nora makes 90 homemade crayons. A small box can hold 8 crayons, and a large box can hold 24 crayons. If she fills 4 small boxes with crayons, how many large boxes will she need for the rest of the crayons?

**Middle School:**

*Question:* Micah sculpts two statues, one of a dog and one of a cat. The real-life dog weighs 20 kilograms, and its statue weighs 48 kilograms. The real-life cat weighs 15 kilograms. If the statues are both proportional to the animals in weight, then how much does the cat’s statue weigh?

**Algebra and Up:**

*Question:* The value of a painting increased by 20% after the painter appeared on a popular talk show. The value of the painting increased again by 15% when the painter was featured in a magazine. If the value of the painting is now $1242.00, what was its original value?

**Lower Elementary:**

*Question:* Jack decides to paint the walls in his bedroom with colourful stripes. The first stripe in the pattern is red, then orange, then yellow, then orange, then red, then orange, then yellow, then orange, and so on. If the pattern continues, what colour will the 30th stripe be?

*Answer:* Orange

*Solution:* The pattern repeats every four stripes—red, orange, yellow, orange. That means that the pattern completes itself 30 ÷ 4 = 7 whole times with a remainder of 2 stripes. So, the pattern completes on the 28th stripe, then we start again at red on the 29th stripe, and orange on the 30th.

**Upper Elementary:**

*Question:* Nora makes 90 homemade crayons. A small box can hold 8 crayons, and a large box can hold 24 crayons. If she fills 4 small boxes with crayons, how many large boxes will she need for the rest of the crayons?

*Answer:* 3 large boxes

*Solution:* Four small boxes hold 8 × 4 = 32 crayons, leaving 90 – 32 = 58 crayons unboxed. So, Nora can put 48 into 2 large boxes and the rest into a 3rd large box.

**Middle School:**

*Question:* Micah sculpts two statues, one of a dog and one of a cat. The real-life dog weighs 20 kilograms, and its statue weighs 48 kilograms. The real-life cat weighs 15 kilograms. If the statues are both proportional to the animals in weight, then how much does the cat’s statue weigh?

*Answer:* 36 pounds

*Solution:* Since 20 ÷ 48 = 5/12, the ratio of the animals’ weight to their statues’ must be 5:12. The cat weighs 15 kilograms, so its statue’s weight must be 36 kilograms because 5:12 = 15:36.

**Algebra and Up:**

*Question:* The value of a painting increased by 20% after the painter appeared on a popular talk show. The value of the painting increased again by 15% when the painter was featured in a magazine. If the value of the painting is now $1242.00, what was its original value?

*Answer:* $900.00

*Solution:* The value increased by 20%, then the percent increase was compounded by another 15%. So, if we call the original value of the painting ***x***, we can set up an equation:

***x***(1.20)(1.15) = $1242.00

1.38***x*** = $1242.00

***x*** = $900.00