**Lower Elementary:**



*Question:* Amaryllis takes piano lessons every day. On weekdays, her lessons are 30 minutes long. On Saturdays and Sundays, her lessons are 45 minutes long. How many hours does Amaryllis spend at her piano lessons each week?

**Upper Elementary:**

*Question:* Tommy and Winthrop are playing a game of pool. If all but 7 of the 15 balls have been pocketed and Tommy has pocketed ¾ of them, then how many balls has Winthrop pocketed?

****

**Middle School:**

*Question:* A marching band includes 76 trombones and 110 cornets. The conductor wants the musicians arranged so that each row has exactly the same number of musicians. He also wants everyone in a row to play the same instrument. What is the greatest number of musicians that can be in each row so that the band is arranged how the conductor wants it?

**Algebra and Up:**

*Question:* A wagon is carrying curtains, a set of dishes, and a double boiler. The double boiler weighs 2 kilograms less than 3 times as much as the curtains. The dishes weigh 2 kilograms more than twice as much as the double boiler. Altogether, the wagon is carrying 16 kilograms. How many times as heavy as the curtains are the dishes?

**Lower Elementary:**

*Question:* Amaryllis takes piano lessons every day. On weekdays, her lessons are 30 minutes long. On Saturdays and Sundays, her lessons are 45 minutes long. How many hours does Amaryllis spend at her piano lessons each week?

*Answer:* 4 hours

*Solution:* In a week, there are 5 weekdays. So, Amaryllis spends 30, 60, 90, 120, 150 minutes at her piano lessons on weekdays. On the weekend, she spends 45 + 45 = 90 minutes at her piano lessons. So, Amaryllis spends 150 + 90 = 240 minutes at her piano lessons each week. Since there are and 60 minutes in an hour, 240 minutes is the same as 4 hours.

**Upper Elementary:**

*Question:* Tommy and Winthrop are playing a game of pool. If all but 7 of the 15 balls have been pocketed and Tommy has pocketed ¾ of them, then how many balls has Winthrop pocketed?

*Answer:* 2 balls

*Solution:* If all but 7 of the balls have been pocketed, then there are 15 – 7 = 8 pocketed balls in total. If Tommy pocketed ¾ of them, then Winthrop pocketed ¼ of them. Since ¼ of 8 is 2, Winthrop pocketed 2 balls.

****

**Middle School:**

*Question:* A marching band includes 76 trombones and 110 cornets. The conductor wants the musicians arranged so that each row has exactly the same number of musicians. He also wants everyone in a row to play the same instrument. What is the greatest number of musicians that can be in each row so that the band is arranged how the conductor wants it?

*Answer:* 2 musicians

*Solution:* To find the number of rows there could be so that each row has the same number of people all playing the same instrument, we find the GCF of 76 and 110. The factors of 76 are 1, 2, 4, 19, 38, and 76. The factors of 110 are 1, 2, 5, 10, 11, 22, 55, and 110. The greatest factor they have in common is 2.

**Algebra and Up:**

*Question:* A wagon is carrying curtains, a set of dishes, and a double boiler. The double boiler weighs 2 kilograms less than 3 times as much as the curtains. The dishes weigh 2 kilograms more than twice as much as the double boiler. Altogether, the wagon is carrying 16 kilograms. How many times as heavy as the curtains are the dishes?

*Answer:* 5 times

*Solution:* First, we find out how much each item weighs by setting up an equation whose sum is the total weight with each individual weight in terms of the weight of the double boiler: ***x*** + (***x*** /3 + 2/3) + (2***x*** + 2) = 16. When we solve this, we find that the double boiler weighs 4 kilograms. So, the curtains weigh 2 kilograms and the dishes weigh 10 kilograms. The dishes are 5 times as heavy as the curtains.