**Lower Elementary:**

*Question:* A sheepdog has a litter of 7 puppies and 1 adopted piglet. Each puppy eats 2 cups of food per day. The piglet eats twice as much as a puppy. How many cups of food do the baby animals need each day in total?

**Upper Elementary:**

*Question:* One farmer sleeps through his alarm clock 3 times every 12 days. Another farmer has a duck that wakes him up 2 out of every 3 days by quacking. Which wakeup method is more effective, the alarm clock or the duck?

**Middle School:**

*Question:* Esme makes a dollhouse that is a perfect miniature of her own farmhouse. The farmhouse is 12 yards wide. The dollhouse is 18 inches wide. What are the dimensions of a miniature refrigerator that goes inside the dollhouse if the real-life refrigerator in the farmhouse is 3 feet wide, 2 feet deep, and 5 feet tall?

**Algebra and Up:**

*Question:* A pig and a border collie are competing in a sheep herding competition. When the pig approaches the sheep at a rate of 11 km/h, the sheep walk away at a rate of 3 km/h. When the border collie chases the sheep at a rate of 25 km/h, the sheep run away at a rate of 20 km/h. Which animal catches up to the sheep faster?

**Lower Elementary:**

*Question:* A sheepdog has a litter of 7 puppies and 1 adopted piglet. Each puppy eats 2 cups of food per day. The piglet eats twice as much as a puppy. How many cups of food do the baby animals need each day in total?

*Answer:* 18 Cups

*Solution:* Since each of the 7 puppies eats 2 cups of food each day, all of the puppies eat 2, 4, 6, 8, 10, 12, 14 cups of food in a day. The piglet eats twice as much as a puppy, and twice as much as 2 cups is 4 cups. So, the baby animals eat 14 + 4 = 18 cups of food in total.

**Upper Elementary:**

*Question:* One farmer sleeps through his alarm clock 3 times every 12 days. Another farmer has a duck that wakes him up 2 out of every 3 days by quacking. Which wakeup method is more effective, the alarm clock or the duck?

*Answer:* The Alarm Clock

*Solution:* Since the farmer sleeps through his alarm 3 times every 12 days, he wakes up to his alarm clock 9 times every 12 days. So, the alarm clock is successful 9 ÷ 12 = ¾ of the mornings it’s used. The duck wakes up the farmer 2 ÷ 3 = ⅔ of the mornings it quacks. Since ¾ is more than ⅔, the alarm clock is more effective than the duck.

**Middle School:**

*Question:* Esme makes a dollhouse that is a perfect miniature of her own farmhouse. The farmhouse is 11 metres wide. The dollhouse is 55 centimetres wide. What are the dimensions of a miniature refrigerator that goes inside the dollhouse if the real-life refrigerator in the farmhouse is 9 decimetres wide, 6 decimetres deep, and 15 decimetres tall?

*Answer:* 4½ cm × 3 cm × 7½ cm

*Solution:* Eleven metres is 110 decimetres, and 55 centimetres is 5½ decimetres. So, the dimensions of the farmhouse are 110 ÷ 5½ = 20 times the dimensions of the dollhouse. To find the dimensions of the miniature refrigerator, we divide by 20:

9 dm (90 cm) divided by 20 is 4½ cm.

6 dm (60 cm) divided by 20 is 3 cm.

15 dm (150 cm) divided by 20 is 7½ cm.

**Algebra and Up:**

*Question:* A pig and a border collie are competing in a sheep herding competition. When the pig approaches the sheep at a rate of 11 km/h, the sheep walk away at a rate of 3 km/h. When the border collie chases the sheep at a rate of 25 km/h, the sheep run away at a rate of 20 km/h. Which animal catches up to the sheep faster?

*Answer:* The Pig

*Solution:* The distance between the pig and the sheep closes at a rate of 11 – 3 = 8 kilometres per hour. The distance between the border collie and the sheep closes by 25 – 20 = 5 kilometres per hour. Since the distance between the pig and the sheep closes faster than the distance between the border collie and the sheep, the pig catches up faster.