**Lower Elementary:**

*Question:* What time is it if the minute hand of a clock is pointed at the second small mark past the 2, the hour hand is pointed between the 5 and 6, and it is the afternoon?

**Upper Elementary:**

*Question:* What number is exactly between one-seventh and two-sevenths?



**Middle School:**

*Question:* On a map, a centimetre represents a quarter of a kilometre. How many miles apart are a bank and a grocery store in real life if they are 21/2 centimetres apart on the map? Give your answer as a fractional part of a kilometre.

**Algebra and Up:**

*Question:* What is the area of a triangle whose vertices lie on the points (1, 3), (22, 3), and (7, 11)? Draw the triangle on a coordinate plane to help you solve the problem.

**Lower Elementary:**

*Question:* *Question:* What time is it if the minute hand of a clock is pointed at the second small mark past the 2, the hour hand is pointed between the 5 and 6, and it is the afternoon?

*Answer:* 5:12 pm

*Solution:* Each number marked on the clock represents 5 minutes, and 5 minutes two times is 10 minutes. Two marks past 10 minutes is 10 + 2 = 12 minutes. Since the hour hand has passed the 5 but hasn’t yet passed the 6, it must be 5:12 pm.

**Upper Elementary:**

*Question:* What number is exactly between one-seventh and two-sevenths?

*Answer:* Three-fourteenths

*Solution:* There aren’t any whole sevenths between one-seventh and two-seventh, so let’s turn them into fourteenths: 1/7 = 2/14, and 2/7 = 4/14. So, since 3 is exactly between 2 and 4, three-fourteenths must be the number that is exactly between one-seventh and two-sevenths.



**Middle School:**

*Question:* On a map, a centimetre represents a quarter of a kilometre. How many miles apart are a bank and a grocery store in real life if they are 21/2 centimetres apart on the map? Give your answer as a fractional part of a kilometre.

*Answer:* 5/8 of a mile

*Solution:* Since each centimetre represents a quarter kilometre, 2 centimetres represents 1/4 × 2 = 1/2 a kilometre. Half of centimetre represents half of a quarter kilometre, which is 1/4 × 1/2 = 1/8 of a kilometre. So, 21/2 centimetres represents 1/2 + 1/8 = 5/8 of a kilometre.

**Algebra and Up:**

*Question:* What is the area of a triangle whose vertices lie on the points (1, 3), (22, 3), and (7, 11)? Draw the triangle on a coordinate plane to help you solve the problem.

*Answer:* 84 square units

*Solution:* The line segment that connects (1, 3) and (22, 3) is the base of the triangle, so its base is 22 – 1 = 21 units. The base of the triangle lies on the line ***y*** = 3, and the highest point of the triangle lies on the line ***y*** = 11, so its height is 11 – 3 = 8. The area of a triangle is half of its base times its height, so the triangle is 1/2 × 21 × 8 = 84 square units.