

Unit 2  
**Lesson 1: Projecting and Scaling**

Let's explore scaling.

**1.1: Number Talk: Remembering Fraction Division**

Find each quotient. Write your answer as a fraction or a mixed number.

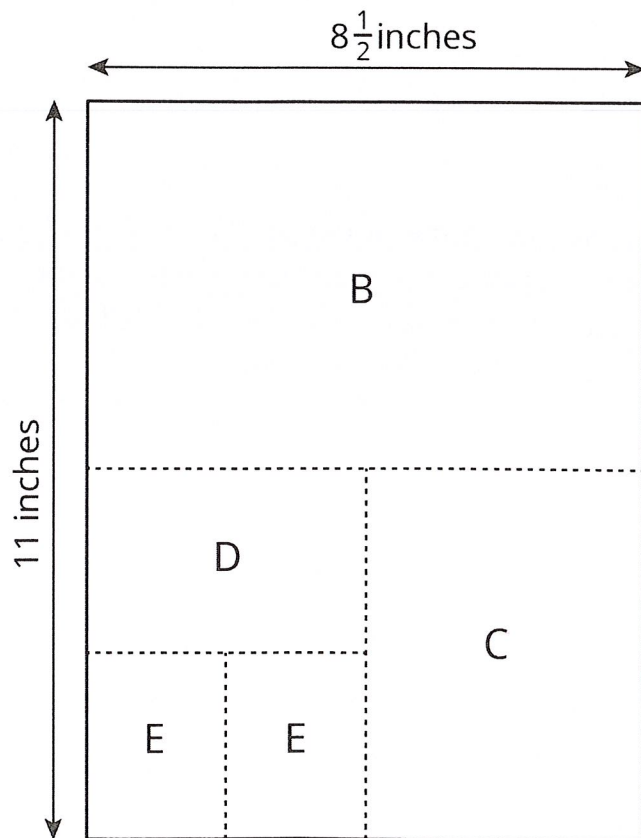
$$6\frac{1}{4} \div 2$$

$$10\frac{1}{7} \div 5$$

$$8\frac{1}{2} \div 11$$

**1.2: Sorting Rectangles**

Rectangles were made by cutting an  $8\frac{1}{2}$ -inch by 11-inch piece of paper in half, in half again, and so on, as illustrated in the diagram. Find the lengths of each rectangle and enter them in the appropriate table.





1. Some of the rectangles are scaled copies of the full sheet of paper (Rectangle A). Enter the measurements of those rectangles in the table.

rectangle	length of short side (inches)	length of long side (inches)
A	$8\frac{1}{2}$	11

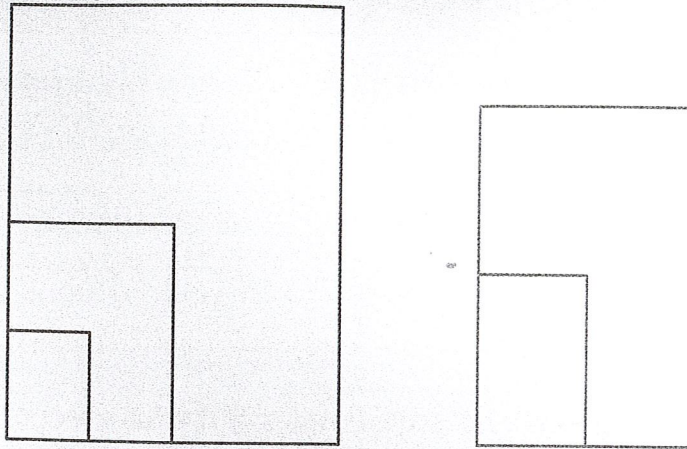
2. Some of the rectangles are *not* scaled copies of the full sheet of paper. Enter the measurements of those rectangles in the table.

rectangle	length of short side (inches)	length of long side (inches)

3. Look at the measurements for the rectangles that are scaled copies of the full sheet of paper. What do you notice about the measurements of these rectangles? Look at the measurements for the rectangles that are *not* scaled copies of the full sheet. What do you notice about these measurements?



4. Stack the rectangles that are scaled copies of the full sheet so that they all line up at a corner, as shown in the diagram. Do the same with the other set of rectangles. On each stack, draw a line from the bottom left corner to the top right corner of the biggest rectangle. What do you notice?



5. Stack *all* of the rectangles from largest to smallest so that they all line up at a corner. Compare the lines that you drew. Can you tell, from the drawn lines, which set each rectangle came from?

**Are you ready for more?**

In many countries, the standard paper size is not 8.5 inches by 11 inches (called "letter" size), but instead 210 millimeters by 297 millimeters (called "A4" size). Are these two rectangle sizes scaled copies of one another?

