Assignment

Write

Write a definition for *complex ratio*, provide an example, and show how your example can be converted into a unit rate.

Remember

To convert a complex rate to a unit rate, you can multiply the numerator and denominator by the reciprocal of the denominator, or you can use the definition of division.

$$\frac{\frac{1}{2}}{\frac{1}{4}} \times \frac{\frac{4}{1}}{\frac{4}{1}} = \frac{\frac{4}{2}}{1} = 2 \qquad \frac{\frac{1}{2}}{\frac{1}{4}} = \frac{1}{2} \div \frac{1}{4} = \frac{1}{2} \cdot 4 = 2$$

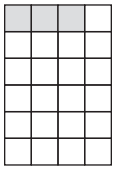
Practice

1. The table shows the gallons filled in a pool over time.

Number of Hours	$\frac{1}{4}$	$\frac{3}{4}$	$1\frac{1}{2}$	$2\frac{1}{2}$
Gallons Filled		$637\frac{1}{2}$		

   a. Complete the table.
   b. Determine a unit rate for this situation.
   c. Use a unit rate to calculate the gallons filled in 5.5 hours.
   d. Use a unit rate to determine about how many minutes it will take to fill 100 gallons in the pool.

2. The rectangle shown is composed of smaller equally-sized squares. The shaded section has an area of $\frac{3}{16}$ square inches. Use a unit rate to determine the area of the larger rectangle.



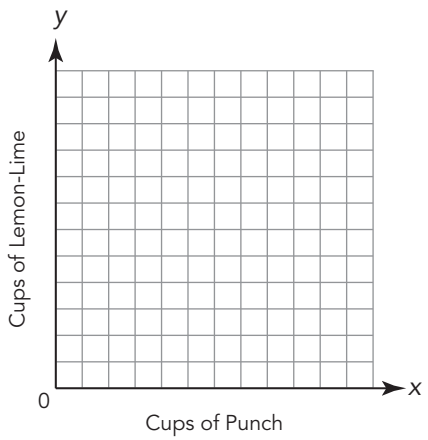
Stretch

An HOn2-scale train is a model train that is constructed at the ratio 1 : 87.1. If an HOn2 model of a locomotive is 10.4712 inches long, how long is the actual locomotive in feet?

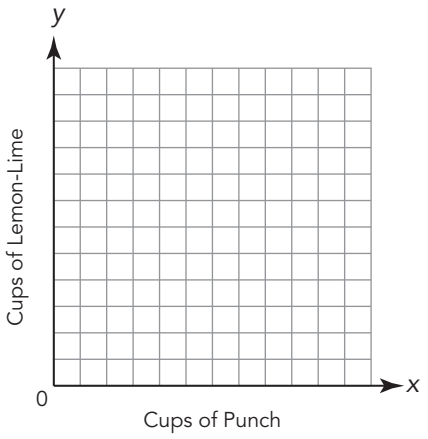
Review

Determine each unit rate and graph each rate on the coordinate plane.

1. $\frac{3}{4}$ cup of punch to $\frac{1}{8}$ cup of lemon-lime



2. 1 cup of lemon-lime : $1\frac{1}{2}$ cups of punch



Answer each question. Use 3.14 for π. Round to the nearest hundredth.

3. The diameter of a circle is 4 cm. Determine the area of the circle.
4. The radius of a circle is 5.24 ft. Determine the circumference of the circle.

Determine each sum or product.

5. 71.05 + 0.54
6. 89.2 × 5.3