

Name \_\_\_\_\_

Date \_\_\_\_\_

## Ratios of Fractions and Their Unit Rates

If  $3\frac{3}{4}$  lb. of candy cost \$20.25, how much would 1 lb. of candy cost?

1. You are getting ready for a family vacation. You decide to download as many movies as possible before leaving for the road trip. If each movie takes  $1\frac{2}{5}$  hours to download and you downloaded for  $5\frac{1}{4}$  hours, how many movies did you download?
2. The area of a blackboard is  $1\frac{1}{3}$  square yards. A poster's area is  $\frac{8}{9}$  square yards. Find the unit rate and explain, in words, what the unit rate means in the context of this problem. Is there more than one unit rate that can be calculated? How do you know?
3. A toy jeep is  $12\frac{1}{2}$  inches long while an actual jeep measures  $18\frac{3}{4}$  feet long. What is the value of the ratio of the length of the toy jeep to length of the actual jeep? What does the ratio mean in this situation?
4.  $\frac{1}{3}$  cup of flour is used to make 5 dinner rolls.
  - a. How much flour is needed to make one dinner roll?
  - b. How many cups of flour are needed to make 3 dozen dinner rolls?
  - c. How many rolls can you make with  $5\frac{2}{3}$  cups of flour?

If  $3\frac{3}{4}$  lb. of candy cost \$20.25, how much would 1 lb. of candy cost?

$$5\frac{2}{5} = 5.4$$

Students may find the unit rate by first converting \$20.25 to  $\frac{81}{4}$  and then dividing by  $\frac{15}{4}$ .

1. You are getting ready for a family vacation. You decide to download as many movies as possible before leaving for the road trip. If each movie takes  $1\frac{2}{5}$  hours to download and you downloaded for  $5\frac{1}{4}$  hours, how many movies did you download?

$3\frac{3}{4}$  movies; however since you cannot download  $\frac{3}{4}$  of a movie then you downloaded 3 movies.

2. The area of a blackboard is  $1\frac{1}{3}$  square yards. A poster's area is  $\frac{8}{9}$  square yards. Find the unit rate and explain, in words, what the unit rate means in the context of this problem. Is there more than one unit rate that can be calculated? How do you know?

$1\frac{1}{2}$ . The area of the blackboard is  $1\frac{1}{2}$  time the area of the poster.

Yes. There is another possible unit rate:  $\frac{2}{3}$  the area of the poster is  $\frac{2}{3}$  the area of the blackboard.

3. A toy jeep is  $12\frac{1}{2}$  inches long, while an actual jeep measures  $18\frac{3}{4}$  feet long. What is the value of the ratio of the length of the toy jeep to length of the actual jeep? What does the ratio mean in this situation?

$$\frac{12\frac{1}{2}}{18\frac{3}{4}} = \frac{\frac{25}{2}}{\frac{75}{4}} = \frac{2}{3}$$

Every 2 inches in length on the toy jeep corresponds to 3 feet in length on the actual jeep.

4.  $\frac{1}{3}$  cup of flour is used to make 5 dinner rolls.

- a. How much flour is needed to make one dinner roll?

$$\frac{1}{15} \text{ cup}$$

- b. How many cups of flour are needed to make 3 dozen dinner rolls?

$$2\frac{2}{5} \text{ cups}$$

- c. How many rolls can you make with  $5\frac{2}{3}$  cups of flour?

85 rolls