

NAME \_\_\_\_\_

Module 7 Ratio, Proportion, and Percent  
Lesson 4 Ratios, Rates, and Proportional Reasoning

# Independent Practice

## 7.4

1. A team won 14 games and lost 10 games. Write the ratio of wins to losses in simplest form.

**The ratio of wins to losses is 7 to 5.**

2. There are 52 trucks and 120 cars parked in a parking lot. Write the ratio of trucks to cars as a fraction in simplest form.

**The ratio of trucks to cars is  $\frac{13}{30}$ .**

**Find the unit rate.**

3. George ran four miles in 20 minutes.  
 **$\frac{1}{5}$  mile per min or five min per mile**
4. Tori drove 156 miles in three hours.  
**52 miles per hour**

**Find the unit cost.**

5. A box of eight bagels cost \$5.20.  
**\$0.65 per bagel**
6. A 46-minute call costs \$1.61.  
**3.5 cents per minute**

7. A plant grew three inches in 10 weeks. At this rate, how much will it grow in 24 weeks?

**The plant will grow 7.2 inches in 24 weeks.**

8. Fishermen on one boat caught 14 fish in 2.5 hours. At this rate, how many fish will they catch in 10 hours?

**They will catch 56 fish.**

9. Don can change two tires in 15 minutes.  
Kade can change three tires in 20 minutes.  
Use tables to determine who changes tires faster.

**Kade changes tires faster.**

*t* = tires

| Don      |           |
|----------|-----------|
| <i>t</i> | <i>m</i>  |
| 2        | 15        |
| 4        | 30        |
| <u>6</u> | <u>45</u> |
| 8        | 60        |

*m* = minutes

| Kade     |           |
|----------|-----------|
| <i>t</i> | <i>m</i>  |
| 3        | 20        |
| <u>6</u> | <u>40</u> |
| 9        | 60        |
| 12       | 80        |

10. The car wash on Main Street can wash six cars in two hours. The car wash on First Avenue can wash 10 cars in four hours. Use unit rates to determine which car wash washes cars quicker.

**Main Street: 3 cars/hr; First Avenue: 2.5 cars/hr  
The car wash on Main Street washes cars quicker.**

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**Journal**

1. Tell why  $\frac{5 \text{ chickens}}{4 \text{ chickens}}$  is not a rate. Give a ratio that is a rate.
2. Ronnie has to find the unit cost of an apple when a bag of 10 apples cost \$2.00. He does not know if he should divide 10 by \$2 or \$2 by 10. What would you tell him?
3. Marcia and Linda both make candles. The tables show how many candles each person makes in a given number of hours.

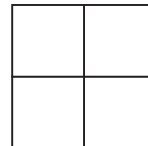
| Marcia         |              |
|----------------|--------------|
| <i>candles</i> | <i>hours</i> |
| 8              | 3            |
| 16             | 6            |
| 24             | 9            |
| 32             | 12           |
| 40             | 15           |
| 48             | 18           |
| 56             | 21           |
| 64             | 24           |

| Linda          |              |
|----------------|--------------|
| <i>candles</i> | <i>hours</i> |
| 5              | 2            |
| 10             | 4            |
| 15             | 6            |
| 20             | 8            |
| 25             | 10           |
| 30             | 12           |
| 35             | 14           |
| 40             | 16           |

- a. Explain two different ways you can use the tables to determine who makes candles at a faster rate.
- b. Explain how you can use unit rates to determine who makes candles at a faster rate.

**Cumulative Review**

1. The large square at right is made up of four smaller squares. The perimeter of the large square is 32 inches. Find the area of one small square.



**The area is 16 square inches.**

**Evaluate.**

2.  $\sqrt{25} - 1^2$

**4**

3.  $10^2 + 11^2$

**221**

4.  $7^2 - \sqrt{49}$

**42**

5.  $13^2 + \sqrt{9}$

**172**

**Find the decimal and percent equivalents.**

6.  $\frac{1}{5}$

**Decimal: 0.2**  
**Percent: 20%**

7.  $\frac{17}{20}$

**Decimal: 0.85**  
**Percent: 85%**

8.  $\frac{8}{9}$

**Decimal:  $0.\bar{8}$**   
**Percent:  $88\frac{8}{9}\%$**

9.  $6\frac{3}{10}$

**Decimal: 6.3**  
**Percent: 630%**

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**Possible Journal Answers**

1. The ratio  $\frac{5 \text{ chickens}}{4 \text{ chickens}}$  is not a rate because the units are the same (both chickens). In a rate, the units must be different, such as  $\frac{5 \text{ chickens}}{4 \text{ pot pies}}$ .
2. In a unit rate, the denominator is always one unit, so in this case it would be one apple. Since apples must be in the denominator, the price must be in the numerator:  $\frac{\$2}{10 \text{ apples}}$ . Because the numerator is the dividend, find  $\$2 \div 10$ , which is \$0.20. The unit rate is \$0.20 per apple.
3. a. I looked for where the numbers in the first columns were the same. This happened at 40. It took Marcia 15 hours to make 40 candles, while it took Linda 16 hours to make the same amount. Therefore, Marcia's rate was faster. Another way I used the table was by looking at where the numbers in the second columns were the same. This happened at 12. In 12 hours, Marcia made 32 candles and Linda made 30. Again, this meant Marcia was faster.  
b. I found the unit rate,  $\frac{\text{candles}}{\text{hours}}$ , for each person. The person with the greater unit rate made candles faster. I could choose any row in the tables to make the rates.  
Marcia:  $\frac{8}{3} = \frac{2\frac{2}{3}}{1} = 2\frac{2}{3}$   
Linda:  $\frac{5}{2} = \frac{2\frac{1}{2}}{1} = 2\frac{1}{2}$   
Because  $2\frac{2}{3}$  is greater than  $2\frac{1}{2}$ , Marcia's rate was faster.

