# Lesson 7

## Problem 1

A car travels 55 miles per hour for 2 hours. Complete the table.

| time (hours) | distance (miles) | miles per hour |
|---|---|---|
| 1 | 55 | 55 |
| $\frac{1}{2}$ | | |
| $1\frac{1}{2}$ | | |
| | 110 | |

### *Solution*

| time (hours) | distance (miles) | miles per hour |
|---|---|---|
| 1 | 55 | 55 |
| $\frac{1}{2}$ | 27.5 | 55 |
| $1\frac{1}{2}$ | 82.5 | 55 |
| 2 | 110 | 55 |

## Problem 2

The table shows the amounts of onions and tomatoes in different-sized batches of a salsa recipe.

Elena notices that if she takes the number in the tomatoes column and divides it by the corresponding number in the onions column, she always gets the same result.

What is the meaning of the number that Elena has calculated?

| onions (ounces) | tomatoes (ounces) |
|---|---|
| 2 | 16 |
| 4 | 32 |
| 6 | 48 |

### *Solution*

The recipe calls for 8 ounces of tomatoes per ounce of onions.

## Problem 3

A restaurant is offering 2 specials: 10 burritos for $12, or 6 burritos for $7.50. Noah needs 60 burritos for his party. Should he buy 6 orders of the 10-burrito special or 10 orders of the 6-burrito special? Explain your reasoning.

### *Solution*

Answers vary. Possible reasoning: Noah should get 6 orders of the 10-burrito special. The 10-burrito special sells burritos at a rate of $1.20 per burrito, because $12 \div 10 = 1.20$. The 6-burrito special sells at a rate of $1.25 per burrito, because $7.5 \div 6 = 1.25$. The 10-burrito special is a better deal.

## Problem 5

(from Unit 3, Lesson 5)
Two planes travel at a constant speed. Plane A travels 2,800 miles in 5 hours. Plane B travels 3,885 miles in 7 hours. Which plane is faster? Explain your reasoning.

### *Solution*

Plane A is faster. Plane A travels $2800 \div 5 = 560$ or 560 miles per hour. Plane B travels $3,885 \div 7 = 555$, or 555 miles per hour. Plane A travels a farther distance in one hour.

## Problem 6

(from Unit 3, Lesson 6)
A car has 15 gallons of gas in its tank. The car travels 35 miles per gallon of gas. It uses $\frac{1}{35}$ of a gallon of gas to go 1 mile.

1. How far can the car travel with 15 gallons? Show your reasoning.
2. How much gas does the car use to go 100 miles? Show your reasoning.

### *Solution*

1. 525 miles. Possible reasoning:

| gallons of gas | miles car can travel |
|---|---|
| 1 | 35 |
| 5 | 175 |
| 15 | 525 |

2. $\frac{100}{35}$ (or $\frac{20}{7}$ or $2\frac{6}{7}$) gallons. Possible reasoning:

| gallons of gas | miles car can travel |
|---|---|
| $\frac{1}{35}$ | 1 |
| $\frac{10}{35}$ | 10 |
| $\frac{100}{35}$ | 100 |

## Problem 7

(from Unit 3, Lesson 4)
A box of cereal weighs 600 grams. How much is this weight in pounds? Explain or show your reasoning. (Note: 1 kilogram = 2.2 pounds)

### *Solution*

1.32 pounds. Explanations vary. Possible explanation:

| grams | pounds |
|---|---|
| 1,000 | 2.2 |
| 100 | 0.22 |
| 500 | 1.1 |
| 600 | 1.32 |

(Note that for the first line of the table, 1 kilogram is written as 1,000 grams.)