

## Warm-up

- $25 \times 17$
- $370/22$
- $27 \times 12$
- $495/18$
- $36 \times 15$

Chapter 5: Buying and Maintaining a Car

Lesson 8: Computing Gas Mileage

Lesson 9: Computing the Range of a Car

## Vocabulary

- Gas Mileage the average number of miles a car will travel on a gallon of gas
- EPA Rating the estimate of how far a car can travel on one gallon of gas
- Range how far a car can travel on a given number of gallons of gas

### 5.8 Find the Gas Mileage for Each Trip

- Allie went on a road trip. She traveled 400 miles and used 20 gallons of gas. What was her gas mileage?

### 5.8 Find the Gas Mileage for Each Trip

	<u>Distance</u>	<u>Gas Used</u>	<u>Gas Mileage</u>
1.	1200 miles	70 gallons	
2.	356 miles	15 gallons	
3.	489 miles	12 gallons	
4.	25 miles	1.2 gallons	

### 5.8 Find the Gas Mileage for Each Trip

	<u>Distance</u>	<u>Gas Used</u>	<u>Gas Mileage</u>
1.	565 miles	23 gallons	
2.	256 miles	12 gallons	
3.	1024 miles	46 gallons	
4.	245 miles	10 gallons	

### 5.8 Find the Gas Mileage for Each Trip

What steps did we take?

## 5.9 Find the Ranges (City & Highway) of a Car

- Lindsey's car has EPA ratings of 40mpg in the city and 50mpg on the highway. Her tank holds 10 gallons of gas. What is the range of her car in the city? What is the range of her car on the highway?

## 5.9 Find the Ranges (City & Highway) of a Car

	<u>EPA Ratings</u>		<u>Tank Capacity</u>	<u>Range</u>	
	<u>City</u>	<u>Highway</u>		<u>City</u>	<u>Highway</u>
1.	6mpg	8mpg	20gal		
2.	20mpg	30mpg	19gal		
3.	7mpg	9mpg	16gal		
4.	21mpg	29mpg	17gal		

## 5.9 Find the Ranges (City & Highway) of a Car

	<u>EPA Ratings</u>		<u>Tank Capacity</u>	<u>Range</u>	
	<u>City</u>	<u>Highway</u>		<u>City</u>	<u>Highway</u>
1.	8mpg	12mpg	10gal		
2.	27mpg	38mpg	19gal		
3.	9mpg	30mpg	9gal		
4.	26mpg	28mpg	18gal		

## 5.9 Find the Ranges (City & Highway) of a Car

What steps did we take?



Name: \_\_\_\_\_

Worksheet 5.8

Date: \_\_\_\_\_

	<u>Distance</u>	<u>Gas Used</u>	<u>Gas Mileage</u>
1.	505 miles	22 gallons	
2.	246 miles	14 gallons	
3.	1034 miles	45 gallons	
4.	275 miles	11 gallons	
5.	345 miles	17 gallons	
6.	125 miles	12 gallons	
7.	1256 miles	49 gallons	
8.	295 miles	17 gallons	
9.	587 miles	20 gallons	
10.	546 miles	17 gallons	
11.	1078 miles	32 gallons	
12.	623 miles	22 gallons	
13.	735 miles	35 gallons	
14.	154 miles	8 gallons	
15.	1798 miles	52 gallons	
16.	371 miles	28 gallons	
17.	637 miles	19 gallons	
18.	2578 miles	62 gallons	
19.	68 miles	5 gallons	
20.	421 miles	10 gallons	

Name: \_\_\_\_\_ Worksheet 5.9

Date: \_\_\_\_\_

<u>EPA Ratings</u>			<u>Range</u>	
	<u>City</u>	<u>Highway</u>	<u>Tank Capacity</u>	
1.	7mpg	11mpg	11gal	<u>City</u> <u>Highway</u>
2.	26mpg	39mpg	18gal	
3.	7mpg	32mpg	10gal	
4.	23mpg	29mpg	17gal	
5.	9mpg	13mpg	12gal	
6.	29mpg	40mpg	17gal	
7.	8mpg	30mpg	6gal	
8.	25mpg	29mpg	16gal	
9.	7mpg	15mpg	15gal	
10.	26mpg	39mpg	20gal	
11.	9mpg	32mpg	8gal	
12.	28mpg	30mpg	17gal	
13.	7mpg	15mpg	9gal	
14.	27mpg	38mpg	21gal	
15.	10mpg	31mpg	7gal	
16.	24mpg	26mpg	19gal	
17.	6mpg	10mpg	15gal	
18.	26mpg	40mpg	19gal	
19.	11mpg	17mpg	9gal	
20.	25mpg	29mpg	18gal	



## Warm-up

Convert the minutes into hours.

- 24 minutes
- 18 minutes
- 12 minutes

Convert the hours into minutes.

- 1 hour
- 0.65 hours
- 0.35 hours

Chapter 5: Buying and Maintaining a Car

Lesson 11: Computing Average Speed

Lesson 12: Computing Travel Time

## Vocabulary

- Miles per hour (mph): A unit of measurement of speed.

### 5.11 Computing Average Speed

- Carlotta drives 330 miles in 8 hours and 42 minutes. What is her average speed in miles per hour?

### 5.11 Computing Average Speed

	<u>Distance</u>	<u>Time</u>	<u>Time(Hours)</u>	<u>MPH</u>
1.	180 mi	4h 30min		
2.	340 mi	6h 12min		

### 5.11 Computing Average Speed

	<u>Distance</u>	<u>Time</u>	<u>Time(Hours)</u>	<u>MPH</u>
3.	1,100 mi	21h 24min		
4.	65 mi	3h 15 min		

### 5.11 Computing Average Speed

What steps did we take?

## 5.12 Computing Travel Time

- Chong plans a 315-mile trip to Virginia. Because he and his family will travel on interstate highways for most of the trip, they hope to average 50mph. How long should they expect the trip to take?

## 5.12 Computing Travel Time

<u>Distance</u>	<u>Speed</u>	<u>Hours</u>	<u>Hrs &amp; Mins</u>
1. 180 mi	45 mph		
2. 91 mi	35 mph		
3. 56 mi	42 mph		

## 5.12 Computing Travel Time

	<u>Distance</u>	<u>Speed</u>	<u>Hours</u>	<u>Hrs &amp; Mins</u>
1.	360 mi	50 mph		
2.	143 mi	37 mph		
3.	285 mi	47 mph		

## 5.12 Computing Travel Time

What steps did we take?



## Computing Average Speed

**EXAMPLE**

Arthur drives 157 miles in 4 hours and 16 minutes. Find his average rate of speed.

**Step 1** Convert minutes to a decimal part of an hour by dividing by 60. Round to the nearest tenth of an hour

$$\begin{array}{r} .26 \text{ Hour} \sim 0.3 \text{ Hour} \\ 60 \overline{) 16.0} \text{ Minutes} \end{array}$$

**Step 2** Write the hours as a decimal number.

$$\begin{array}{l} 4 \text{ hours and } 16 \text{ minutes} = \\ 4 \text{ hours} + 0.3 \text{ hours} = 4.3 \text{ hours} \end{array}$$

**Step 3** Divide the miles by the hours

$$\begin{array}{r} 36.5 \sim 37 \text{ miles per hour} \\ 4.3 \overline{) 157.0} \end{array}$$

Arthur's average rate of speed is 37 miles per hour.

**Directions** Find the average speed for these trips. Round your answer to the nearest mile per hour.

	Distance	Time	Average Speed
1.	92 miles	1 hours, 55 minutes	_____
2.	437 miles	10 hours, 15 minutes	_____
3.	906 miles	30 hours, 30 minutes	_____
4.	83 miles	1 hours, 47 minutes	_____
5.	143 miles	3 hours, 10 minutes	_____
6.	892 miles	25 hours, 15 minutes	_____
7.	3,445 miles	86 hours, 14 minutes	_____
8.	572 miles	14 hours, 35 minutes	_____
9.	998 miles	30 hours, 30 minutes	_____
10.	1,653 miles	34 hours, 55 minutes	_____
11.	285 miles	5 hours, 16 minutes	_____
12.	188 miles	4 hours, 12 minutes	_____
13.	621 miles	15 hours, 14 minutes	_____
14.	490 miles	9 hours, 30 minutes	_____
15.	1,477 miles	29 hours, 30 minutes	_____

## Computing Travel Time

**EXAMPLE**

Clifford plans a trip of 304 miles. He expects to be able to average 50 miles per hour. How much time should Clifford expect the trip to take?

**Step 1** Divide the miles by the average speed. Round to the nearest hundredth of an hour.

$$\begin{array}{r} 6.08 \text{ Hours} \\ 50 \overline{) 304.00} \text{ Miles} \end{array}$$

**Step 2** Convert the decimal part of the quotient to minutes by multiplying it by 60.

$$\begin{array}{r} .08 \text{ Hour} \\ \times 60 \text{ Minutes per hour} \\ \hline 4.80 \sim 5 \text{ minutes} \end{array}$$

Clifford's trip should take about 6 hours and 5 minutes.

**Directions** Find the travel time for each of these trips. Round your answer to the nearest minute.

	Distance	Average Speed	Estimated Time for Trip
1.	450 miles	30 mph	_____
2.	450 miles	35 mph	_____
3.	450 miles	40 mph	_____
4.	450 miles	45 mph	_____
5.	450 miles	55 mph	_____
6.	100 miles	55 mph	_____
7.	200 miles	55 mph	_____
8.	300 miles	55 mph	_____
9.	400 miles	55 mph	_____
10.	500 miles	55 mph	_____
11.	700 miles	37 mph	_____
12.	700 miles	42 mph	_____
13.	700 miles	47 mph	_____
14.	700 miles	52 mph	_____
15.	700 miles	57 mph	_____
16.	1,000 miles	55 mph	_____