

4.13

Word Problem with Decimal Division

• Example 1

Jesse drove 185 miles in 3.5 hours. What was his average speed (to the nearest mile per hour)?

Solution To find the average speed (miles per hour) we divide the distance by the time.

Remember: We assume that the decimal point is to the right of 185.

$$185 = 185.0$$

Then shift the decimal points.

$$\begin{array}{r} 52.8 \\ 3.5 \overline{)185.00} \\ \underline{175} \\ 100 \\ \underline{70} \\ 300 \\ \underline{280} \\ 20 \end{array}$$

We use the formula

$$\text{Speed} = \text{distance} \div \text{time}$$

Carry the division to the tenths place and then round 52.8 to 53. So Jesse's average speed was 53 mi/h.

● ● ● CHECK YOURSELF 1

To convert from centimeters to inches, you can divide by 2.54. Find the number of inches in 25 cm (to the nearest hundredth of an inch).

• Example 2

At the start of a trip the odometer read 34,563. At the end of the trip, it reads 36,235. If 86.7 gallons of gas were used, find the number of miles per gallon (to the nearest tenth).

Solution First, find the number of miles traveled by subtracting the initial reading from the final reading.

36,235	Final reading
-34,563	Initial reading
1,672	Miles covered

Next, divide the miles traveled by the number of gallons used. This will give us the miles per gallon.

$$\begin{array}{r}
 19.28 \\
 86.7 \overline{)1672.00} \\
 \underline{867} \\
 8050 \\
 \underline{7803} \\
 2470 \\
 \underline{1734} \\
 7360 \\
 \underline{6936} \\
 424
 \end{array}$$

Round 19.28 to 19.3 mi/gal.

● ● ● CHECK YOURSELF 2

John starts his trip with an odometer reading 15,436 and ends with a reading of 16,238. If he used 45.9 gallons of gas, find the number of miles per gallon (to the nearest tenth).

● ● ● CHECK YOURSELF ANSWERS

1. 9.84 in. 2. 17.5 mi/gal.
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4.13 Exercises

Name _____

Section _____

Date _____

A N S W E R S

Solve the following applications.

1. **Weight.** One nail weighs 0.025 ounce. How many nails are there in 1 lb? (1 lb is 16 oz.)

1. _____

2. **Mileage.** When Andrea started on her trip, the odometer read 18,912 mi. When she returned home, it read 19,315 mi. She used 22.9 gal of gas. What was her gas mileage (to the nearest tenth)?

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

3. **Volume.** The water in an aquarium weighs 1025 lb. If water weighs 62.5 pounds per cubic foot, how many cubic feet of water does the aquarium hold?

4. **Conversion.** To convert from millimeters to inches, we can divide by 25.4. If film is 35 mm wide, find the width to the nearest hundredth of an inch.

5. **Quantity.** A piece of bubble gum weighs 0.25 ounces. How many pieces of gum are there in 2 pounds (32 oz)?

6. **Gas mileage.** At the start of a trip, an odometer read 27,458. At the end of the trip, it read 28,808 and 38.7 gallons of gas had been used. Find the number of miles per gallon (gas mileage) to the nearest tenth.

7. **Speed.** Carlos drove 224 miles in 4.5 hours. What was his speed to the nearest mile per hour?