

Learning Objective: Students will be able to use a formal rule to add and subtract decimals.

Warm Up

$$3. \frac{9}{11} + \frac{1}{11}$$

$$7. \frac{6}{19} + \frac{2}{3}$$

$$11. \frac{2}{11} + \frac{1}{2}$$

$$4. \frac{1}{3} + \frac{2}{17}$$

$$8. \frac{1}{3} + \frac{1}{6}$$

$$12. \frac{4}{11} + \frac{3}{8}$$

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Warm Up Answers

$$3. \frac{9}{11} + \frac{1}{11} \\ = \frac{10}{11}$$

$$7. \frac{6}{19} + \frac{2}{3} \\ = \frac{56}{57}$$

$$11. \frac{2}{11} + \frac{1}{2} \\ = \frac{15}{22}$$

$$4. \frac{1}{3} + \frac{2}{17} \\ = \frac{23}{51}$$

$$8. \frac{1}{3} + \frac{1}{6} \\ = \frac{1}{2}$$

$$12. \frac{4}{11} + \frac{3}{8} \\ = \frac{65}{88}$$

Lesson 2.4

Essential Question:

How can you add and subtract decimals?

Lesson Objective:

Students will be able to:

use a formal rule to add and subtract decimals.

Self-Evaluation Scale

Score	Description
4	I can teach other students how to use a model and a formal rule to divide with mixed numbers.
3	I can use a model and a formal rule to divide with mixed numbers.
2	I recognize, but still need help to use a model and a formal rule to divide with mixed numbers.
1	I do not know how to use a model and a formal rule to divide with mixed numbers.

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Key Idea

Adding and Subtracting Decimals

To add or subtract decimals, write the numbers vertically and line up the decimal points. Then bring down the decimal point and add or subtract as you would with whole numbers.

	3	¹ 2	.	5	0
+	0	3	.	6	1
<hr/>					
	3	6	.	1	1

$$97.3 - .4321$$

$$\begin{array}{r} 97.3 \\ - .4321 \\ \hline 96.5679 \end{array}$$

9⁶ 7 . 3¹² 0⁹ 0⁹ 0 0

0 0 . 4 3 2 1



9 6 . 8 6 7 9

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1 Adding Decimals

a. Add $8.13 + 2.76$.

Estimate $8.13 + 2.76 \approx 8 + 3 = 11$

Line up the decimal points.

$$\begin{array}{r} 8.13 \\ + 2.76 \\ \hline 10.89 \end{array}$$

Add as you would with whole numbers.

Reasonable? $10.89 \approx 11$ ✓

b. Add $1.459 + 23.7$.

$$\begin{array}{r} 1 \\ 1.459 \\ + 23.700 \\ \hline 25.159 \end{array}$$

Insert zeros so that both numbers have the same number of decimal places.

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2 Subtracting Decimals

a. Subtract $5.508 - 3.174$.

Estimate $5.508 - 3.174 \approx 6 - 3 = 3$

Line up the decimal points.

$$\begin{array}{r} 4 \\ 5.\cancel{5}\cancel{0}8 \\ - 3.174 \\ \hline 2.334 \end{array}$$

Subtract as you would with whole numbers.

Reasonable? $2.334 \approx 3$ ✓

b. Subtract $21.9 - 1.605$.

$$\begin{array}{r} 9 \\ 81 \\ 21.\cancel{9}\cancel{0}\cancel{0} \\ - 1.605 \\ \hline 20.295 \end{array}$$

Insert zeros so that both numbers have the same number of decimal places.

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OYO!

Add or subtract.

1. $4.206 + 10.85$

2. $15.5 + 8.229$

3. $78.41 + 90.99$

4. $6.34 - 5.33$

5. $27.9 - 0.905$

6. $18.626 - 13.88$

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$$\begin{array}{r} 7512 \\ 18.626 \\ - 13.880 \\ \hline 04.746 \end{array}$$

2. $15.5 + 8.229$

$$\begin{array}{r} 15.500 \\ + 08.229 \\ \hline 23.729 \end{array}$$

1. $4.206 + 10.85$

$$\begin{array}{r} +04.206 \\ 10.850 \\ \hline 15.056 \end{array}$$

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3 Real-Life Application

Your meal at the school cafeteria costs \$3.45. Your friend's meal costs \$3.90. You pay for both meals with a \$10 bill. How much change do you receive?

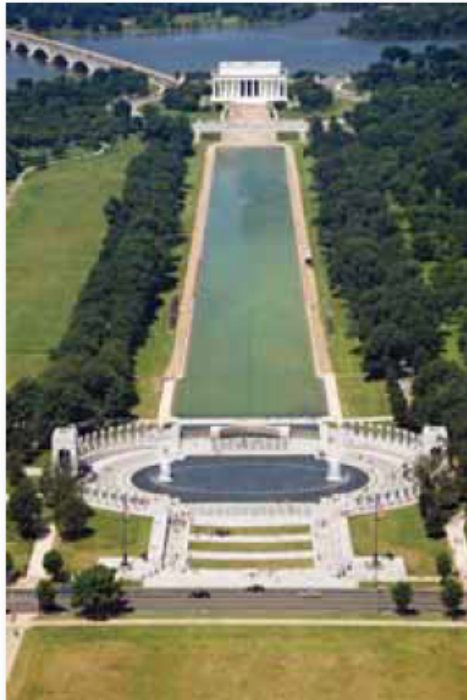
Use a verbal model to solve the problem.

$$\begin{aligned}
 \text{amount of change} &= \text{amount given} - \left(\text{cost of your meal} + \text{cost of friend's meal} \right) \\
 &= 10.00 - (3.45 + 3.90) && \text{Substitute values.} \\
 &= 10.00 - 7.35 && \text{Add inside parentheses.} \\
 &= 2.65 && \text{Subtract.}
 \end{aligned}$$

••• So, you receive \$2.65.

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4 Real-Life Application



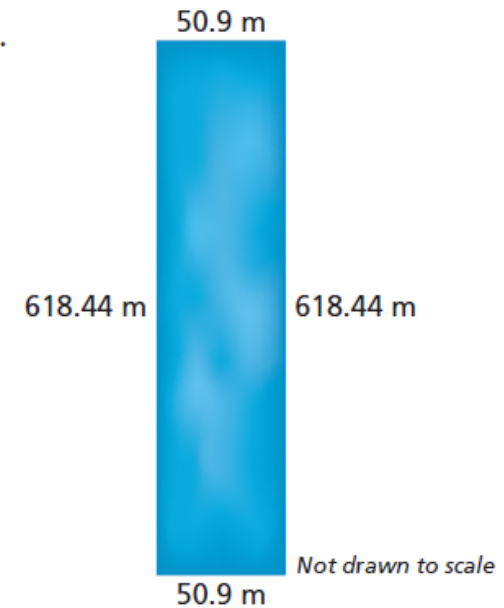
The Lincoln Memorial Reflecting Pool is approximately rectangular. Its width is 50.9 meters, and its length is 618.44 meters. You walk the perimeter of the pool. About how many meters do you walk?

Draw a diagram and label the dimensions.

Find the sum of the side lengths.

$$\begin{array}{r} 112 \\ 618.44 \\ 50.90 \\ 618.44 \\ + 50.90 \\ \hline 1338.68 \end{array}$$

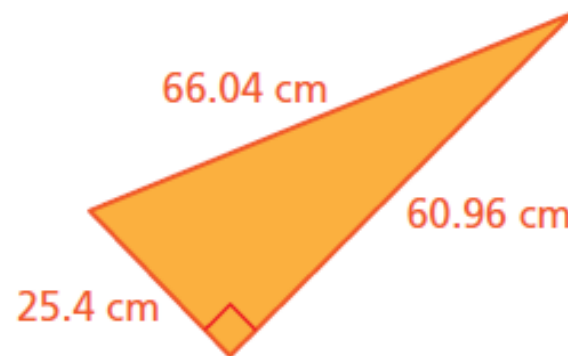
••• So, you walk about 1339 meters.



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OYO 2!

- 7. WHAT IF?** In Example 3, your meal costs \$4.10 and your friend's meal costs \$3.65. You pay for both meals with a \$20 bill. How much change do you receive?
- 8.** Find the perimeter of the triangle.



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Assignment

Complete problems:

5, 9, 12, 16, 23, 24, 28, 30, & 35

on pages 82 & 83 in your Big Ideas Text Book.

Lesson 2.4

November 4, 2015

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Homework

In your Big Ideas Record and Practice Journal
page 46.