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

Warm Up

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

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

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

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

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

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

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Warm Up Answers

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

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

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

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

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

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

Lesson 2.4   October 24, 2016

Essential Question:

How can you add and subtract decimals?

Lesson 2.4   October 24, 2016

Lesson Objective:

Students will be able to:

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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.
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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.

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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.

$$
\begin{array}{r}
\overset{4\ 10}{5.\cancel{5}\cancel{0}\,8} \\
-\ 3.1\,7\,4 \\
\hline
2.3\,3\,4
\end{array}
$$

Subtract as you would with whole numbers.

Reasonable? $2.334 \approx 3$ ✓

b. Subtract 21.9 − 1.605.

$$
\begin{array}{r}
\overset{9}{\underset{}{}} \\
8\ \cancel{10}10 \\
21.9\cancel{0}\cancel{0} \\
-\ 1.6\,0\,5 \\
\hline
20.2\,9\,5
\end{array}
$$

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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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?
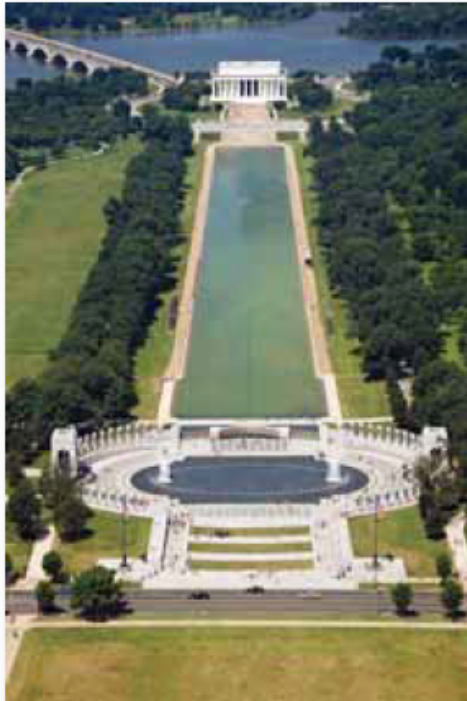
Use a verbal model to solve the problem.

$$\text{amount of change} = \text{amount given} - \left(\text{cost of your meal} + \text{cost of friend's meal} \right)$$

$= 10.00 - (3.45 + 3.90)$ Substitute values.

$= 10.00 - 7.35$ Add inside parentheses.

$= 2.65$ Subtract.

So, you receive $2.65.

Learning Objective: Students will be able to use a formal rule to add and subtract decimals.
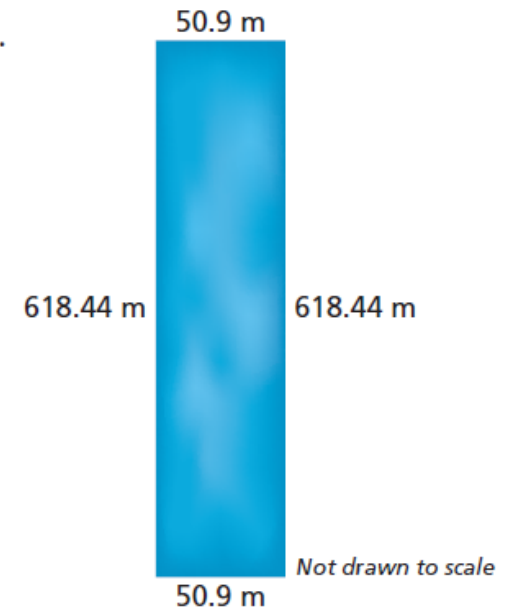
4 **Real-Life Application**

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.

50.9 m

Find the sum of the side lengths.

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

618.44 m   618.44 m

So, you walk about 1339 meters.

Not drawn to scale
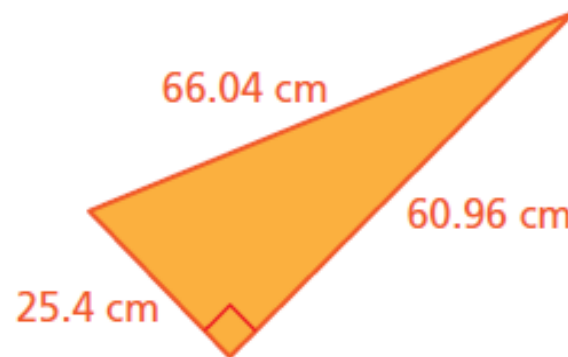
50.9 m

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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.

66.04 cm

60.96 cm

25.4 cm

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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.

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Homework

Monday 10/24: In your Big Ideas Record and Practice Journal page 29-30

Tuesday 10/25 :In your Big Ideas Record and Practice Journal page 46.