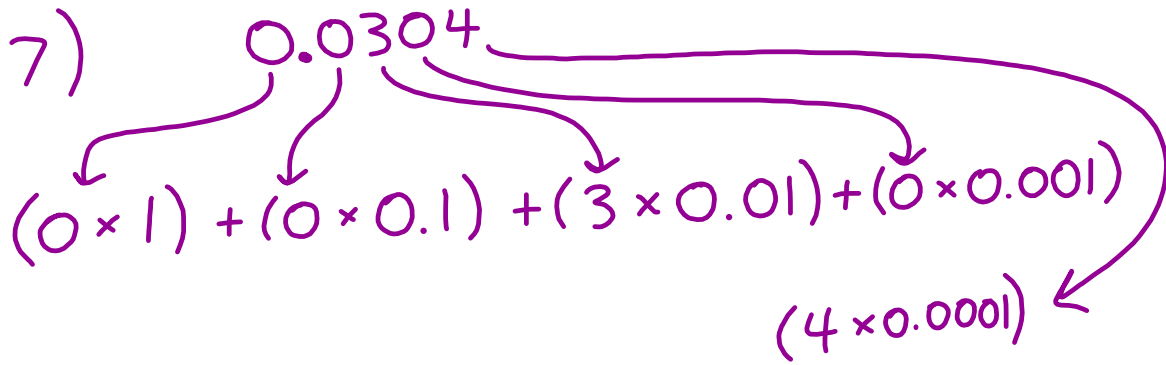


5) 20.02

$$(2 \times 10) + (0 \times 1) + (0 \times 0.1) + (2 \times 0.01)$$

6) 7.5

$$(7 \times 1) + (5 \times 0.1)$$



NAME _____ DATE _____ PERIOD _____

Practice: Skills
Representing Decimals

Write each decimal in word form.

1. 6.5 2. 0.3 3. 39.2

4. 0.88 5. 5.67 6. 14.006

7. 12.001 8. 0.5214 9. 12.0905

~~Five thousandths~~
~~0.005~~

Five thousand two hundred fourteen ten-thousandths

Write each decimal in standard form and expanded form.

10. three tenths 11. fifteen and one tenth

0.3
(3 × 0.1)

12. eight and four hundredths 13. seventy-two and sixteen thousandths

14. one hundred and one hundredth 15. four hundred seven thousandths

16. four hundred seven ten-thousandths 17. one hundred and one thousandth

100.001 sec notes

18. Express $(2 \times 100) + (3 \times 10) + (1 \times 1) + (4 \times 0.1) + (5 \times 0.01)$ in word form.
231.45

Two hundred thirty-one and forty-five hundredths.

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17) 100.001

$(1 \times 100) + (0 \times 10) + (0 \times 1) + (0 \times 0.1) + (0 \times 0.01) + (1 \times 0.001)$

Textbook p. 104 #4 - 44 evens

4) 0.7 seven tenths

6) 5.32 five and thirty-two hundredths

8) 34.542 thirty-four and five hundred forty-two thousandths

$$10) \quad 0.9 \quad (0 \times 1) + (9 \times 0.1)$$

$$12) \quad 3.22 \quad (3 \times 1) + (2 \times 0.1) + (2 \times 0.01)$$

~~3.022~~

$$14) \quad 1.25 \text{ pints}$$

one and twenty-five hundredths pints

$$(1 \times 1) + (2 \times 0.1) + (5 \times 0.01)$$

$$24) \quad 20.054$$

Twenty and fifty-four thousandths

26) 9.0769

nine and seven hundred sixty-nine
ten thousandths

34) 0.0102

$$(0 \times 1) + (0 \times 0.1) + (1 \times 0.01) + (0 \times 0.001) + (2 \times 0.0001)$$

NAME _____ DATE _____ PERIOD _____
3-2 Practice: Word Problems
Comparing and Ordering Decimals

MUSIC For Exercises 1-4, use the table.
 The table shows the percent of the music market for each type of music.

Music Industry Sales Statistics, 2001	
Type of Music	Percent of Market
Pop	12.1
Country	10.5
Rock	24.4
Rap/Hip-Hop	11.4
R&B	10.6

- Use $>$ or $<$ to compare the percents for pop and rap/hip-hop. Which is greater?
 $10.5 < 10.6$
 10.6 is greater than 10.5, meaning that a higher percent of people chose R and B over country.
- Use $>$ or $<$ to compare the percents for country and R&B. Which is greater?
 $10.5 < 10.6$
 10.6 is greater than 10.5, meaning that a higher percent of people chose R and B over country.
- If you owned a store that sells CDs, which kind of music would you want to sell, based on the table? Explain.
- Suppose children's songs have 12.05 percent of the market. Is this greater or less than the percent for pop music? Explain.
 $12.10 > 12.05$
 The children's songs market share is less than the pop music market share since the tenths digit is less (0 vs. 1).
- CONSTRUCTION Alberto is setting out four boards of lumber. The lengths of the boards are 4.5 feet, 4.52 feet, 4 feet, and 4.505 feet. Order the lengths from longest to shortest.
 $4.500 \rightarrow$ longest
 $4.52 \rightarrow$ next longest
 $4.000 \rightarrow$ smallest
 $4.505 \rightarrow$ next smallest
- CONSTRUCTION Ella set out a board of pine lumber that was 0.8 feet long and a board of cedar lumber that was 0.80 feet long. Alberto said the cedar board was longer. Is he correct? Explain.

longest 4.52, 4.505, 4.5, 4 shortest
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3-3 Study Guide and Intervention
Rounding Decimals

To round a decimal, first underline the digit to be rounded. Then look at the digit to the right of the place being rounded.
 • If the digit is 4 or less, the underlined digit remains the same.
 • If the digit is 5 or greater, add 1 to the underlined digit.

EXAMPLE 1 Round 6.58 to the nearest tenth.

Underline the digit to be rounded.	Look at the digit to the right of the underlined digit.	Since the digit to the right is 8, add one to the underlined digit.
6. <u>5</u> 8	6.5 <u>8</u>	6.6

To the nearest tenth, 6.58 rounds to 6.6.

EXAMPLE 2 Round 86.943 to the nearest hundredth.

Underline the digit to be rounded.	Look at the digit to the right of the underlined digit.	Since the digit is 3 and $3 < 5$, the digit 4 remains the same.
86.9 <u>4</u> 3	86.9 <u>4</u> 3	86.94

To the nearest hundredth, 86.943 rounds to 86.94.

EXERCISES

Round each decimal to the indicated place-value position.

- 3.21; tenths $3.2 \downarrow (1 < 5)$
- 2.0505; thousandths $2.050 \uparrow (5 = 5)$
- 6.5892; hundredths $6.59 \uparrow (9 > 5)$
- 235.709; hundredths $235.71 \uparrow (9 > 5)$
- 0.0914; thousandths 0.091
- 34.35; tenths $34.4 \uparrow (5 \geq 5)$
- 500.005; hundredths 500.01
- 2.5134; tenths 2.5
- 0.0052; thousandths 0.005
- 0.0052; hundredths 0.01
- 131.1555; thousandths $131.156 \uparrow (5 \geq 5)$
- 232.88; tenths 232.9

Lesson 3-3

5-3 Practice: Word Problems
Rounding Decimals

POPULATION For Exercises 1 and 2, use the table.
The table shows the number of people in the United States per square mile.

U.S. Population	
Year	Number of people per square mile of land area
1970	57.4
1980	64.0
1990	70.3
2000	79.6



1. Round the decimal for the number of people per square mile in 2000 to the nearest tens. Then round it to the nearest ones. *see notes*
2. Round the decimal for the number of people per square mile in 1970 to the nearest tens. Then round it to the nearest ones. $57.4 \approx 60$ (tens), $57.4 \approx 57$ (ones)

EVERGLADES For Exercises 3-7, use the following information.
The Everglades National Park gets an average of 59.10 inches of rainfall a year. It had 1,080,250 million visitors in 2001, and its budget for 2003 was \$13.958 million.

3. How much rain does the Everglades National Park receive each year rounded to the nearest inch?
4. How many visitors did the park have rounded to the nearest tenth of a million?
5. How many visitors did the park have rounded to the nearest ten-thousandth of a million?
6. What is the budget to the nearest million? $\$13.958 \text{ million} \uparrow$
7. What is the budget to the nearest hundredth of a million? $\$13.958 \text{ million} \uparrow$
 $\$13.96 \text{ million}$
8. SNOWBOARDING Mike, Jake, and Aaron are buying snowboards. Mike is getting his snowboard on sale for \$219.49. Jake's costs \$279.97. Aaron's costs \$234.95. Round each snowboard price to the nearest dollar.
Mike = $\$219.49 \approx \219
Jake = $\$279.97 \approx \280
Aaron = $\$234.95 \approx \235

The budget of the Everglades National Park is approximately \$13.96 million.

Lesson 3-3

1) $\underline{79.6} \rightarrow 80$ (nearest tens)
 $\underline{79.6} \rightarrow 80$ (nearest ones)

Textbook p. 600 #1-20 3-3

1) $5.64 \downarrow 5.6$
 (Arrow from 4 to 6)

2) $12.376 \uparrow 12.38$
 (Arrow from 7 to 8)

20) $74.00065 \uparrow 74.0007$
 (Arrow from 6 to 7)

16) $4.00098 \downarrow 4.00$
 (Arrow from 9 to 0)

11) $1.0049 \uparrow 1.005$
 (Arrow from 4 to 5)

4) $6.17 \downarrow 6$
 (Arrow from 7 to 0)

3-4 Study Guide and Intervention
 Estimating Sums and Differences

Estimation Methods	
Rounding	Estimate by rounding each decimal to the nearest whole number that is easy for you to add or subtract mentally.
Front-End Estimation	Estimate by first adding or subtracting the front digits. Then add or subtract the next digits.
Clustering	Estimate by rounding a group of close numbers to the same number.

EXAMPLE 1 Estimate $14.07 + 43.22$ using front-end estimation.

Add the front digits.	Add the next digits.
$\begin{array}{r} 14.07 \\ + 43.22 \\ \hline 57 \end{array}$	$\begin{array}{r} 14.07 \\ + 43.22 \\ \hline 57.00 \end{array}$ <p>An estimate for $14.07 + 43.22$ is 57.</p>

EXAMPLE 2 Use clustering to estimate $\$7.62 + \$7.89 + \$8.01 + \7.99 .

To use clustering, round each addend to the same number.

$\begin{array}{r} 7.62 \\ 7.89 \\ 8.01 \\ + 7.99 \\ \hline 32.00 \end{array}$	$\begin{array}{r} 8.00 \\ 8.00 \\ 8.00 \\ + 8.00 \\ \hline 32.00 \end{array}$ <p>An estimate for $\\$7.62 + \\$7.89 + \\$8.01 + \\7.99 is \$32.</p>
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EXERCISES

Estimate using rounding.

1. $59.18 + 17.99 \approx 77$ 2. $\$45.65 + \$8.00 \approx \$53$ 3. $4.65 + 4.44 \approx 9$

Estimate using front-end estimation.

4. $81.23 + 0.51 \approx 81.74$ 5. $42.06 + 17.89 \approx 59.95$ 6. $754.23 - 3.17 \approx 751.06$

Estimate using clustering.

7. $\$0.99 + \$1.15 + \$0.52 \approx \2.66 8. $3.65 + 4.02 + 3.98 \approx 11.65$ 9. $6.87 + 6.97 + 7.39 \approx 21.23$

NAME _____ DATE _____ PERIOD _____



Practice: Word Problems

Estimating Sums and Differences

SPORTS For Exercises 1-3, use the table.

The table shows the percent of annual hospital visits due to sports injuries by males 15 to 19 years of age.

Percent of Male Sports-Related Injuries in the U.S., 2000-2001			
Sport	Percent	Sport	Percent
Basketball	25.9	Boxing, Wrestling	4.4
Football	21.3	Exercise	3.8
Baseball/softball	4.1	Bicycling	8.1
Soccer	4.6	Skateboarding	3.6

- | | |
|--|--|
| <p>1. Use clustering to estimate the total number of hospital visits due to injuries in baseball/softball, exercising, skateboarding, and boxing.</p> | <p>2. Use rounding to estimate how many more visits were due to football injuries than to soccer injuries.</p> |
| <p>3. Use front-end estimation to estimate the total number of visits caused by injuries in basketball and skateboarding.</p> | <p>4. BASKETBALL Len dribbled a basketball for 43 seconds before Greg got the ball away. Then Greg dribbled the ball for 11.525 seconds before Len got the ball. Use front-end estimation to estimate how many more seconds Len dribbled the ball than Greg.
<i>Len dribbled the ball about 32 seconds longer than Greg.</i></p> |
| <p>5. GARDENING Kevin is going to plant three new types of vegetables in his garden. The garden store sells packages of tomatillo seeds for \$1.67, chili pepper seeds for \$0.89, and pumpkin seeds for \$2.32. Use rounding to estimate how much Kevin will spend on all three packets of seeds.</p> | <p>6. TRAVEL Gloria drove 53.2 miles to her grandmother's home. From her grandmother's home she drove 12.67 miles to her aunt's home. Use front-end estimation to estimate how many miles Gloria drove to get to her aunt's home. Then use rounding to estimate the number of miles again.</p> |

$$\begin{array}{r} 43 \\ - 11.525 \\ \hline \approx 32.000 \end{array}$$

NAME _____ DATE _____ PERIOD _____



Study Guide and Intervention

Adding and Subtracting Decimals

To add or subtract decimals, line up the decimal points then add or subtract digits in the same place-value position. Estimate first so you know if your answer is reasonable.

EXAMPLE 1 Find the sum of 61.32 + 8.26.

First, estimate the sum using front-end estimation.

$$61.32 + 8.26 \rightarrow 61 + 8 = 69$$

$$\begin{array}{r} 61.32 \\ + 8.26 \\ \hline 69.58 \end{array}$$

Since the estimate is close, the answer is reasonable.

EXAMPLE 2 Find 2.65 - 0.2.

Estimate: 2.65 - 0.2 → 3 - 0 = 3

$$\begin{array}{r} 2.65 \\ - 0.20 \quad \text{Annex a zero.} \\ \hline 2.45 \end{array}$$

Since the estimate is close, the answer is reasonable.

EXERCISES

Add or subtract.

1. $\begin{array}{r} 23 \\ + 41 \\ \hline 64 \end{array}$

2. $\begin{array}{r} 0.517 \\ + 2.651 \\ \hline 3.168 \end{array}$

3. $\begin{array}{r} 0.0123 \\ - 0.0028 \\ \hline \end{array}$

4. $\begin{array}{r} 132.346 \\ + 0.486 \\ \hline \end{array}$

5. $\begin{array}{r} 113.7999 \\ + 6.2001 \\ \hline \end{array}$

6. $\begin{array}{r} 0.0058 \\ - 0.0026 \\ \hline \end{array}$

7. $\begin{array}{r} \$5.63 \\ + 4.10 \\ \hline \end{array}$

8. $\begin{array}{r} 5.00021 \\ - 4.00013 \\ \hline 1.00008 \end{array}$

9. $0.2 + 5.64 + 9.005$
see notes

10. $12.36 - 4.081$

11. $216.8 - 34.055$
see notes

12. $4.62 + 3.415 + 2.4$

Lesson 3-5

9)

$$\begin{array}{r}
 0.200 \\
 + 5.640 \\
 + 9.005 \\
 \hline
 14.845
 \end{array}$$

11)

$$\begin{array}{r}
 179 \\
 216.800 \\
 - 34.055 \\
 \hline
 182.745
 \end{array}$$

NAME _____ DATE _____ PERIOD _____

3-5 Practice: Word Problems
Adding and Subtracting Decimals

LESSON 3-5

1. **MICE** The average length of the head and body of a western harvest mouse is 2.9 inches. The average length of the tail is 2.8 inches. First, estimate the total length of the mouse. Then find the actual total length.

2. **MUSIC** A piano solo on a CD is 5.33 minutes long. A guitar solo is 9.67 minutes long. How much longer is the guitar solo than the piano solo? First estimate the difference. Then find the actual difference.

$\approx 9 - 5 \approx 4$

$$\begin{array}{r}
 9.67 \\
 - 5.33 \\
 \hline
 4.34
 \end{array}$$

The guitar solo is 4.34 minutes longer than the piano solo.

3. **WHALES** The average length of a humpback whale is 13.70 meters. The average length of a killer whale is 6.85 meters. How much longer is the humpback whale than the killer whale?

$$\begin{array}{r}
 13.70 \\
 - 6.85 \\
 \hline
 6.85
 \end{array}$$

The humpback whale is 6.85 meters longer than the killer whale.

4. **GARDENING** Alan is connecting three garden hoses to make one longer hose. The green hose is 6.25 feet long, the orange hose is 5.755 feet long, and the black hose is 6.5 feet long. First, estimate the total length. Then find the actual total length.

+

5. **ASTRONOMY** Distance in space can be measured in astronomical units, or AU. Jupiter is 6.2 AU from the Sun. Pluto is 39.223 AU from the Sun. How much closer to the Sun is Jupiter than Pluto?

$$\begin{array}{r}
 39.223 \\
 - 6.200 \\
 \hline
 34.023
 \end{array}$$

Jupiter is 34.023 AU closer to the Sun than Pluto.

6. **ALGEBRA** It is x miles from James City to Huntley and y miles from Huntley to Grover. How many miles is it from James City to Grover? To find out, evaluate $x + y$ if $x = 4.23$ and $y = 16.876$.

$$\begin{array}{r}
 4.23 \\
 + 16.876 \\
 \hline
 21.106
 \end{array}$$

The distance between James City and Grover is 21.106 miles.

