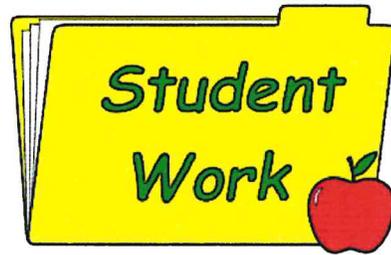


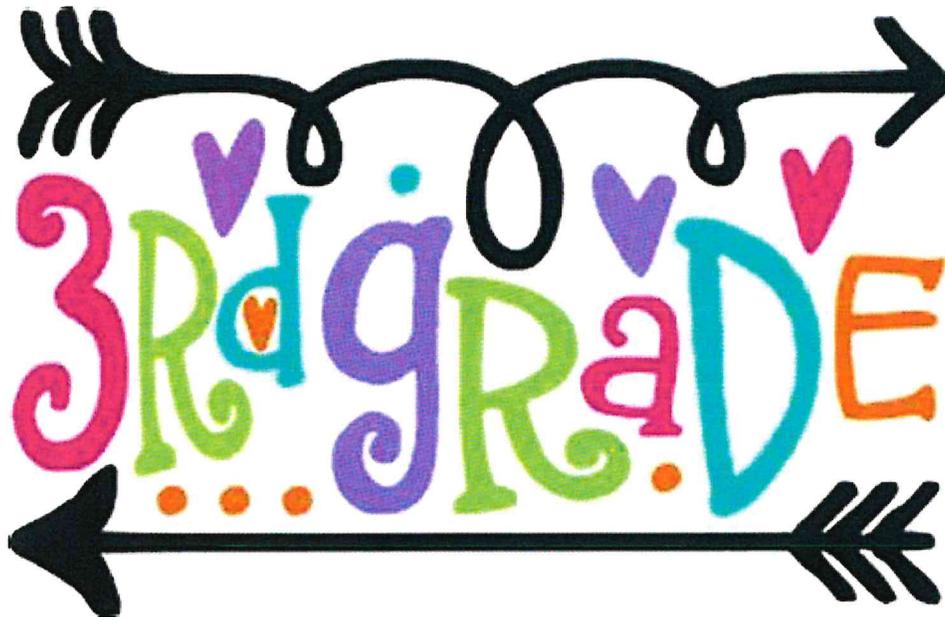
Unity Elementary School



MATH

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April 2020 MATH

Sun	Mon	Tue	Wed	Thu	Fri	Sat
				¹ MATH COACH book GMAS Practice Assessment pg. A1 - A41		
5	6	7	8	9	10	11
SPRING BREAK!						
¹² DOMAIN 1 Numbers & Operations in Base 10	¹³ Lesson 1 Read & Write Whole Numbers pg. 2 - 10	¹⁴ Lesson 2 Compare and Order Whole Numbers pg. 11 - 18	¹⁵ Lesson 3 Addition Properties pg. 19 - 25	¹⁶ Lesson 4 Patterns pg. 26 - 34	¹⁷ Lesson 5 Add Whole Numbers pg. 35 - 42	18
19	²⁰ Lesson 6 Subtract Whole Numbers pg. 43 - 50	²¹ Lesson 7 Round Whole Numbers pg. 51 - 57	²² Lesson 8 Estimate Sums & Differences pg. 58 - 65	²³ Domain 1 Assessment Lessons 1 - 8	²⁴ Lesson 9 Understand Multiplication pg. 70 - 78	25
²⁶ DOMAIN 2 Operations & Algebraic Thinking	²⁷ Lesson 10 Multiplication Facts pg. 79 - 87	²⁸ Lesson 11 Multiplication Patterns pg. 88 - 97	²⁹ Lesson 12 Multiplication Word Problems pg. 98 - 105	³⁰ Lesson 13 Multiplication Properties pg. 106 - 113	Lesson 14 Multiply by 10's pg. 114 - 120	



Domain 1

Number and Operations in Base Ten

Lesson 1 Read and Write Whole Numbers
MGSE3.NBT.1

Lesson 2 Compare and Order Whole Numbers
MGSE3.NBT.1

Lesson 3 Addition Properties
MGSE3.NBT.2

Lesson 4 Patterns
MGSE3.OA.9

Lesson 5 Add Whole Numbers
MGSE3.OA.8, MGSE3.NBT.2

Lesson 6 Subtract Whole Numbers
MGSE3.OA.8, MGSE3.NBT.2

Lesson 7 Round Whole Numbers
MGSE3.NBT.1

Lesson 8 Estimate Sums and Differences
MGSE3.OA.8

Domain 1: Cumulative Assessment for Lessons 1-8

Read and Write Whole Numbers



Getting the Idea

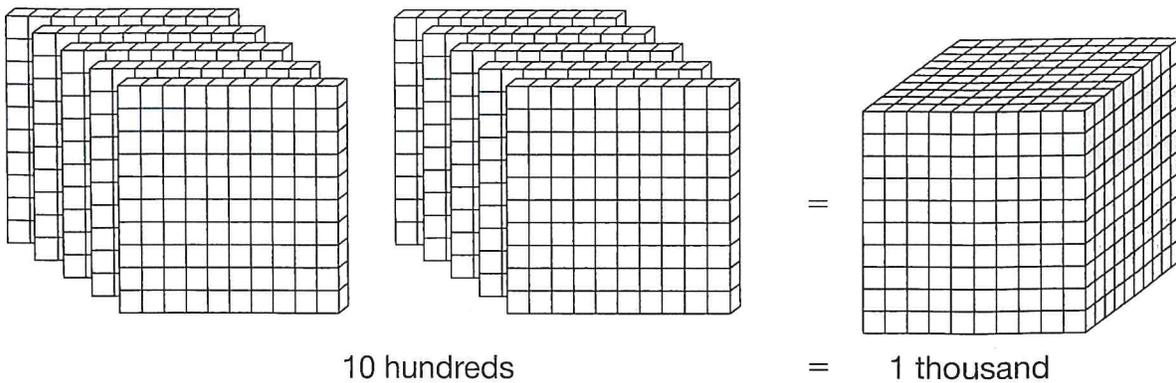
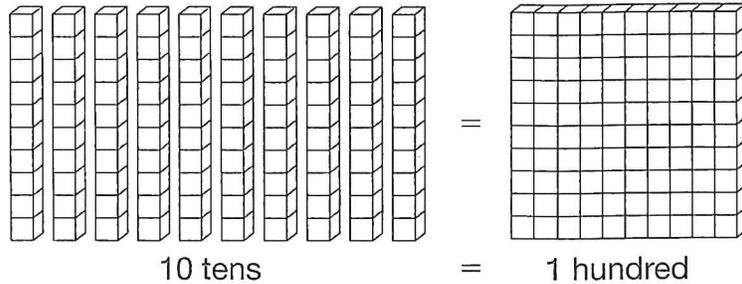
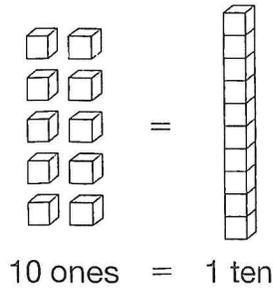
Whole numbers are the numbers 0, 1, 2, 3, 4, 5, and so on. **Digits** are used to write numbers.

The number 61,243 has five digits. Each digit's value is based on its position in the number. This is called its **place value**. A **place-value chart** can be used to show the value of each digit in a number.

Ten Thousands	Thousands	Hundreds	Tens	Ones
6	1	2	4	3

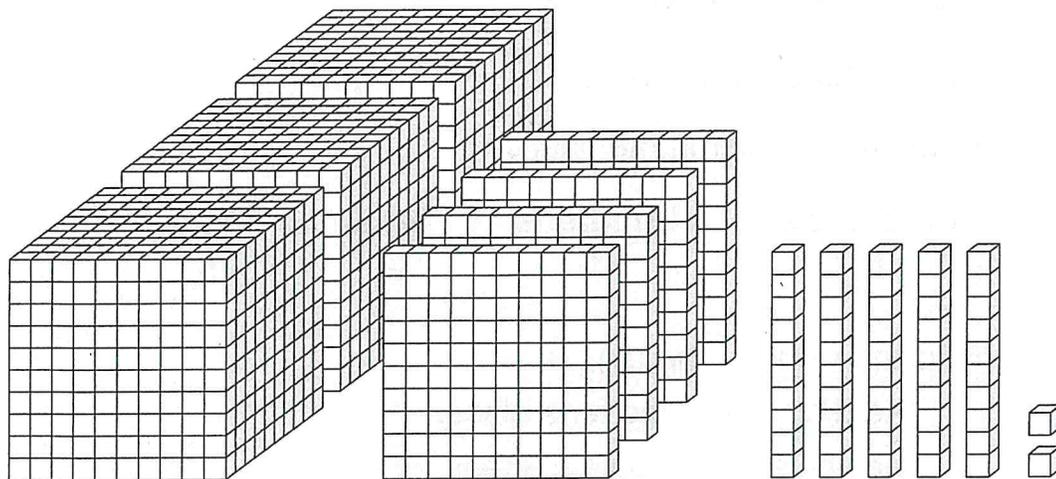
So 61,243 has 6 ten thousands, 1 thousand, 2 hundreds, 4 tens, and 3 ones.

The **place-value system** is based on 10s.



Example 1

What number do the models show?



Strategy Skip count each group of blocks. Write the value of each group of blocks from greatest to least place-value position.

Step 1

Skip count the thousands.

1,000; 2,000; 3,000

There are 3 thousands. Write a 3 in the thousands place and a comma to separate the thousands and hundreds places.

3,

Step 2

Skip count the hundreds.

100, 200, 300, 400

There are 4 hundreds. Write a 4 in the hundreds place.

3,4

Step 3

Skip count the tens.

10, 20, 30, 40, 50

There are 5 tens. Write a 5 in the tens place.

3,45

Step 4

Count the ones.

There are 2 ones. Write a 2 in the ones place.

3,452

Solution The models show the number 3,452.

Example 2

A singer's new song was downloaded 8,495 times in one day. What is the value of the digit 9 in the number 8,495?

Strategy Use a place-value chart.

Write the number in the chart.

Thousands	Hundreds	Tens	Ones
8	4	9	5

Find the value of the digit 9.

The digit 9 is in the tens place.

The value of the digit is 9 tens, or 90.

Solution The value of the digit 9 in 8,495 is 9 tens, or 90.

Numbers can be written in different forms.

Base-ten numerals: 28,495

Number name: twenty-eight thousand, four hundred ninety-five

Expanded form: $20,000 + 8,000 + 400 + 90 + 5$

Example 3

What is the number name for 81,173?

Strategy Use place value.

Step 1 Read the value of the digits to the left of the comma.

81 thousands = 81,000

Write 81,000 in words, then insert a comma.

eighty-one thousand,

Step 2 Read the value of the digits to the right of the comma.

1 hundred, 7 tens, 3 ones = 173

Write 173 in words.

one hundred seventy-three

Step 3

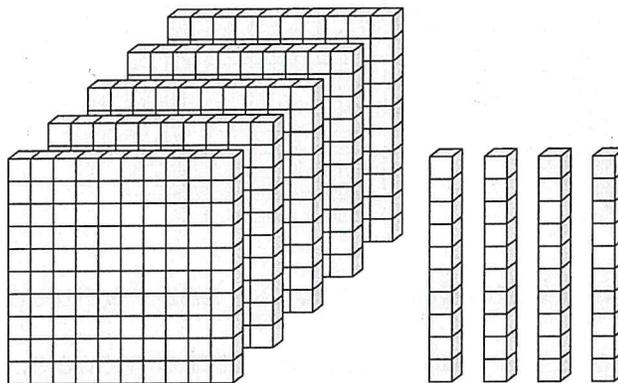
Write the number name.

eighty-one thousand, one hundred seventy-three

Solution The number name for 81,173 is **eighty-one thousand, one hundred seventy-three.**

Example 4

Andy said the model shows between 400 and 500. Is he correct?



Strategy Count the tens and hundreds.

Step 1

Count the tens. There are 4 tens.

There are not enough tens to make an additional hundred.

Step 2

Count the hundreds. There are 5 hundreds.

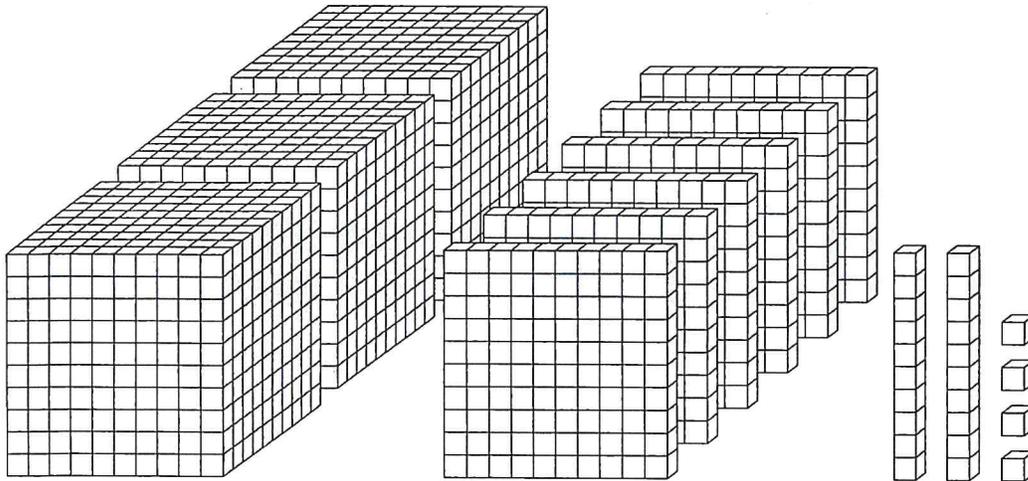
The number is greater than 500 and less than 600.

Solution Andy is incorrect.



Coached Example

What number do the models show?



Write the number using base-ten numerals and its number name.

Write the number in base-ten numerals. Count the models.

There are _____ thousands.

There are _____ tens.

There are _____ hundreds.

There are _____ ones.

Write the number in a place-value chart.

Thousands	Hundreds	Tens	Ones

The number in base-ten numerals is _____.

Write the number name.

Write the thousands part in words. _____

Write the hundreds part in words. _____

Write the tens part in words. _____

Write the ones part in words. _____

The number name is _____.



Lesson Practice • Part 1

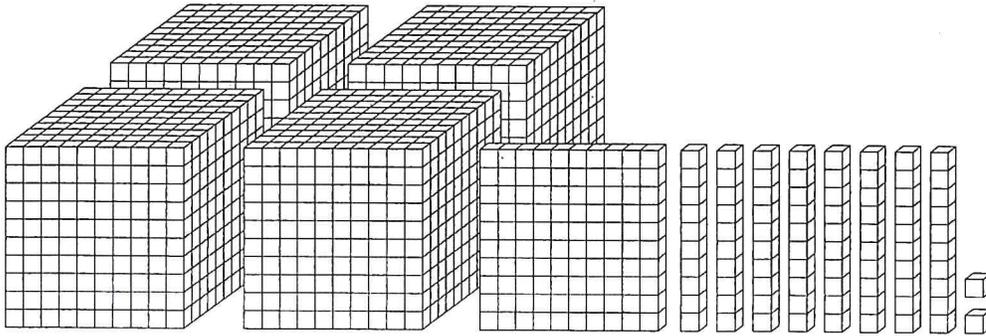
Choose the correct answer.

- Which shows 1 thousand, 5 hundreds, 9 tens, 0 ones?
 - A. 159
 - B. 951
 - C. 1,509
 - D. 1,590
- Which is the number name for 2,215?
 - A. two thousand, one hundred twenty-five
 - B. two thousand, two hundred fifteen
 - C. five thousand, one hundred twenty-two
 - D. twenty-two hundred, fifty-five
- Which number has a 6 in the tens place?
 - A. 1,768
 - B. 2,316
 - C. 4,625
 - D. 6,184
- Which shows the number forty-five thousand, eight-hundred nineteen in base-ten numerals?
 - A. 45,819
 - B. 45,189
 - C. 48,591
 - D. 91,854
- Which is the expanded form of 62,803?
 - A. $6,000 + 200 + 80 + 3$
 - B. $60,000 + 2,000 + 80 + 3$
 - C. $60,000 + 2,000 + 800 + 3$
 - D. $60,000 + 2,000 + 800 + 30$
- What number is shown by the models?

 - A. 2,147
 - B. 2,174
 - C. 2,417
 - D. 7,412

7. There are 38,072 seats in a stadium. What is the number name for 38,072?
- A. thirty-eight thousand, twenty-seven
 - B. thirty-eight thousand, seven hundred twenty
 - C. thirty-eight thousand, seven hundred two
 - D. thirty-eight thousand, seventy-two

8. Frank modeled the number below.



- A. Write the number in base-ten numerals.

- B. Write the number name.

- C. Write the number in expanded form.

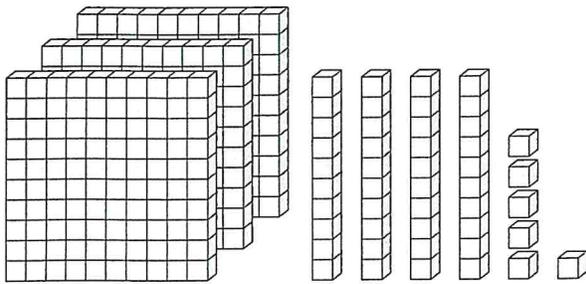


Lesson Practice • Part 2

Choose the correct answer.

- Lake Michigan has an area of 22,300 square miles. Which is the number name for 22,300?
 - A. two thousand, three hundred
 - B. twenty thousand, two hundred thirty
 - C. twenty-two thousand, thirty
 - D. twenty-two thousand, three hundred

- A number is modeled using base-ten blocks.



Between which two hundreds is the number represented by the model?

- A. 500 and 600
- B. 400 and 500
- C. 300 and 400
- D. 200 and 300

- Which is the expanded form of four thousand, one hundred sixty?
 - A. $400 + 10 + 6$
 - B. $4,000 + 10 + 6$
 - C. $4,000 + 100 + 6$
 - D. $4,000 + 100 + 60$

- Greg wrote 72,408. The next number he wrote had 1 less in the thousands place and 3 more in the tens place. Which other number did Greg write?
 - A. 62,438
 - B. 71,438
 - C. 73,378
 - D. 75,398

- A number has one place value that is 0. In which form is 0 included when writing a number?
 - A. when written as a number name
 - B. when written in expanded form
 - C. when written using base-ten numerals
 - D. when represented by base-ten blocks

6. In 1819, the United States added seventy-two thousand, three square miles of area. Which names the number of square miles in expanded form?

- A. $7,000 + 200 + 3$
- B. $70,000 + 2,000 + 3$
- C. $70,000 + 2,000 + 30$
- D. $70,000 + 2,000 + 300$

7. Mauna Loa is the tallest volcano in Hawaii. It stands thirteen thousand, six hundred eighty-one feet high. When the height is written using base-ten numerals, which place values have the same digit?

- A. tens and ones
- B. thousands and tens
- C. thousands and hundreds
- D. ten thousands and ones

8. Mount McKinley in Alaska is the tallest mountain in the United States. Its height in feet has 2 ten thousands, 3 hundreds, and 2 tens.

A. Write the number in base-ten numerals.

B. Write the number name.

C. Write the number in expanded form.

Compare and Order Whole Numbers



Getting the Idea

You can compare and order whole numbers by looking at their place values. To compare numbers, use the following symbols:

$>$ means **is greater than**.

$<$ means **is less than**.

$=$ means **is equal to**.

Example 1

Which symbol makes this statement true? Write $>$, $<$, or $=$.

$$5,358 \bigcirc 5,385$$

Strategy Line up the digits on the ones place. Then compare the digits from left to right.

Step 1

Line up the digits on the ones place.

5,358

5,385

Step 2

Compare the greatest place: thousands.

5,358

5,385

Since $5 = 5$, compare the next greatest place: hundreds.

Step 3

Compare the hundreds.

5,**3**58

5,**3**85

Since $3 = 3$, compare the next greatest place: tens.

Step 4

Compare the tens.

5,358

5,385

$5 < 8$

So 5,358 is less than 5,385. Use the symbol $<$.

Solution 5,358 $<$ 5,385

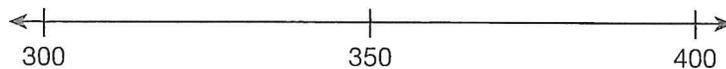
Example 2

Is 357 closer to 300 or 400?

Strategy Compare 357 to 350.

Step 1

Make a number line from 300 to 400 by 50s.



Step 2

Determine if 357 is to the left or right of 350.

It is to the right of 350.

Step 3

Compare the digits in the greatest place: hundreds.

357

350

Since $3 = 3$, compare the next greatest place: tens.

Step 4

Compare the tens.

357

350

Since $5 = 5$, compare the next greatest place: ones.

Step 5

Compare the ones.

357

350

$7 > 0$

So, 357 is greater than 350.

Since 357 is greater than 350, it is closer to 400.

Solution The number 357 is closer to 400 than 300.

Example 3

The table below shows the highest elevations in four U.S. states.

Highest Elevations

State	Elevation (in feet)
Georgia	4,784
Oklahoma	4,973
Vermont	4,393
West Virginia	4,863

Order these states from greatest to least elevation.

Strategy Line up the digits on the ones place. Compare the digits from left to right.

Step 1

Line up the digits on the ones place.

4,784

4,973

4,393

4,863

Step 2

Compare the digits in the greatest place: thousands.

All the digits have a 4 in the thousands place.

Move on to the hundreds place.

Step 3

Compare the hundreds place of the numbers.

9 is greater than 8, 7, or 3. So 4,973 is the greatest number.

8 is greater than 7 or 3. So 4,863 is the second greatest number.

7 is greater than 3. So 4,784 is the next greatest number.

3 is less than 9, 8, or 7. So 4,393 is the least number.

Step 4

Order the numbers from greatest to least.

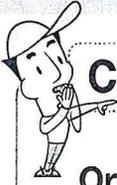
4,973; 4,863; 4,784; 4,393

Step 5

Replace the numbers in the list with their states.

Oklahoma, West Virginia, Georgia, Vermont

Solution From greatest to least elevation, the order of the states is Oklahoma, West Virginia, Georgia, and Vermont.



Coached Example

Order the following numbers from greatest to least.

7,736

7,175

7,742

Write the numbers by lining up the digits on the ones place.

Compare the digits from left to right.

Compare the thousands place.

All of the thousands digits are _____.

Compare the hundreds place.

7 hundreds ○ 1 hundred

So, the least number is _____.

Compare the tens place of the remaining two numbers.

3 tens ○ 4 tens

So, the greatest number is _____.

The numbers written from greatest to least are



Lesson Practice • Part 1

Choose the correct answer.

- Which number has the least value?
 - A. 73,629
 - B. 73,926
 - C. 73,692
 - D. 73,296
- Which of the following is true?
 - A. $6,507 = 6,570$
 - B. $7,125 > 7,152$
 - C. $7,439 < 7,451$
 - D. $9,381 < 9,318$
- Which list orders the numbers from least to greatest?
 - A. 7,257 7,527 7,725
 - B. 7,725 7,257 7,527
 - C. 7,527 7,257 7,725
 - D. 7,527 7,725 7,257
- Which number has the greatest value?
 - A. 82,157
 - B. 83,526
 - C. 83,265
 - D. 82,751
- The table shows the number of people in four Kentucky cities.

City Populations	
City	Number of People
Alexandria	8,286
Benton	4,197
Central City	5,893
Flatwoods	7,605

Which of the following cities has the second greatest number of people?

 - A. Alexandria
 - B. Benton
 - C. Central City
 - D. Flatwoods

6. Which digit makes this sentence true?

$$53,426 < 53, \square 09$$

- A. 2
- B. 3
- C. 4
- D. 5

7. Which number is greater than 14,520 and less than 14,549?

- A. 14,508
- B. 14,630
- C. 14,497
- D. 14,532

8. Which of the following is **not** true?

- A. $62,749 > 62,801$
- B. $31,597 > 31,499$
- C. $85,151 < 85,164$
- D. $96,156 < 96,463$

9. Ms. Frankel wrote the following two numbers on the board.

$$43,892 \qquad 43,928$$

She asked the class to compare the numbers.

A. Write the symbol to make this sentence true. Use $>$, $<$, or $=$.

$$43,892 \bigcirc 43,928$$

B. Ms. Frankel wrote a third number on the board. Order Ms. Frankel's numbers from least to greatest.

$$43,892 \qquad 43,928 \qquad 43,392$$



Lesson Practice • Part 2

Choose the correct answer.

- Which describes the location of 745 on a number line?
 - A. between 650 and 700
 - B. between 700 and 750
 - C. between 750 and 800
 - D. between 800 and 850
- Using the digits 2, 6, 7, and 8 exactly once, which is the greatest 4-digit number that can be made?
 - A. 8,267
 - B. 8,726
 - C. 8,672
 - D. 8,762
- The table shows the number of radio stations that have a news/talk format.

News/Talk Stations

Year	Number of Stations
2011	1,455
2012	1,503
2013	1,453
2014	1,409

Which of these years had the least number of news/talk stations?

- A. 2011
- B. 2012
- C. 2013
- D. 2014

- Which of the following is true?
 - A. $57,368 > 57,683$
 - B. $64,095 = 64,905$
 - C. $72,324 < 72,342$
 - D. $81,678 > 81,786$
- Which lists the numbers from greatest to least?
 - A. 3,087; 3,084; 3,076; 3,069
 - B. 3,069; 3,087; 3,076; 3,084
 - C. 3,069; 3,076; 3,084; 3,087
 - D. 3,087; 3,076; 3,069; 3,084
- The table shows the populations of three countries.

Country Populations

Country	Population
Liechtenstein	37,313
Monaco	30,508
San Marino	32,742

Which lists the populations from least to greatest?

- A. 37,313; 30,508; 32,742
- B. 37,313; 32,742; 30,508
- C. 30,508; 32,742; 37,313
- D. 32,742; 37,313; 30,508

7. Jamila scored 28,320; 27,640; and 28,040 playing a computer game.

In Jamila's fourth game, she earned her third greatest score. Which could have been Jamila's score in her fourth game?

- A. 28,215
- B. 27,750
- C. 27,345
- D. 27,160

8. Which number makes this list true?

6,487; ____; 6,501

- A. 6,478
- B. 6,496
- C. 6,501
- D. 6,503

9. The Giants play in a stadium that seats 41,915. Which team's stadium has a greater seating capacity?

- A. Cubs: 41,072
- B. Brewers: 41,900
- C. Mets: 41,922
- D. Nationals: 41,408

10. Warren said that 639 is closer to 600 than to 700. Dawn said that 658 is closer to 600 than to 700. Who is correct?

- A. Warren only
- B. Dawn only
- C. They are both correct.
- D. Neither is correct.

11. Mrs. Cooper wrote the digits 4, 5, 2, and 8 on the board.

- A. Write the three least 4-digit numbers that can be created by using each digit exactly once.

- B. Write the three greatest 4-digit numbers that can be created by using each digit exactly once.

- C. Write the symbol that makes this sentence true. Use $>$, $<$, or $=$.

4,528 8,254

Addition Properties



Getting the Idea

Using **addition** properties can make it easier for you to add numbers.

The **commutative property of addition** says that changing the order of the **addends** does not change the **sum**.

$$\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc = \bigcirc\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc$$

$$2 + 4 = 4 + 2$$

$$6 = 6$$

Example 1

Which number makes this sentence true?

$$12 + 18 = 18 + \square$$

Strategy Use the **commutative property of addition**.

The commutative property of addition says that changing the order of the addends does not change the sum.

$$12 + 18 = 30$$

$$18 + 12 = 30$$

Solution The number **12** makes the sentence true.

The **associative property of addition** says that changing the grouping of the addends does not change the sum.

For example, $(4 + 3) + 5 = 4 + (3 + 5)$.

$$(4 + 3) + 5 = 7 + 5$$

$$7 + 5 = 12$$

$$4 + (3 + 5) = 4 + 8$$

$$4 + 8 = 12$$

Example 2

Find the sum.

$$3 + (17 + 6) = \square$$

Strategy Use the associative property of addition.

Step

Change the grouping of the addends.

Use mental math.

Think: $3 + 17 = 20$

$$3 + (17 + 6) = (3 + 17) + 6$$

Step 2

Find the sum.

$$(3 + 17) + 6$$

$$20 + 6 = 26$$

Solution $3 + (17 + 6) = 26$

The **identity property of addition** says that the sum of any addend and 0 is that addend.

For example, $9 + 0 = 9$ and $0 + 17 = 17$.

Example 3

What number goes in the \square to make the sentence true?

$$0 + \square = 23$$

Strategy Use the identity property of addition.

Step 1

Look at the numbers in the number sentence $0 + \square = 23$.
The addend is 0. The sum is 23.

Step 2

Find the other addend.

Use the identity property of addition.

When an addend is added to 0, the sum is the addend.

$$0 + 23 = 23$$

Solution $0 + 23 = 23$

**Coached Example**

If $4 + 9 = 13$, what is the missing addend in the number sentence below?

$$\square + 4 = 13$$

What is the sum in the number sentence $4 + 9 = 13$? _____

What is the sum in the number sentence $\square + 4 = 13$? _____

Are the sums the same? _____

What are the two addends in the number sentence $4 + 9 = 13$?

_____ and _____

What property of addition says that adding the addends in a different order does not change the sum? _____

What is the missing addend in the number sentence $\square + 4 = 13$? _____

The missing addend is _____.



Lesson Practice Part 1

Choose the correct answer.

1. Which number makes this sentence true?

$$15 + 16 = \square + 15$$

- A. 31
- B. 21
- C. 16
- D. 15

2. Which number makes this sentence true?

$$4 + \square = 4$$

- A. 0
- B. 1
- C. 4
- D. 5

3. Which number makes this sentence true?

$$\square + 7 = 7$$

- A. 0
- B. 1
- C. 7
- D. 14

4. Which is the missing number?

$$(22 + 17) + 3 = 22 + (17 + \square)$$

- A. 42
- B. 22
- C. 17
- D. 3

5. Which number makes the sentence true?

$$\square + 5 = 5 + 4$$

- A. 0
- B. 1
- C. 4
- D. 9

6. Which is the missing number?

$$(3 + \square) + 5 = 3 + (4 + 5)$$

- A. 3
- B. 4
- C. 5
- D. 12

7. Which number makes the sentence true?

$$0 + 8 = \square$$

- A. 0
 B. 1
 C. 8
 D. 9

8. Sasha wants to add the numbers below.

$$9 + (1 + 7) = (9 + 1) + 7 = 17$$

What property of addition was used to find the sum?

- A. commutative property
 B. associative property
 C. identity property
 D. zero property

9. Jamie said that the following is a true number sentence.

$$13 + (4 + 7) = 13 + (7 + 4)$$

- A. Which property of addition makes the sentence true?

- B. Jamie then wrote this number sentence. Which property of addition makes this sentence true?

$$13 + (7 + 4) = (13 + 7) + 4$$

- C. What is the sum? Show your work.

$$(13 + 7) + 4$$



Lesson Practice Part 2

Choose the correct answer.

1. Which number makes this sentence true?

$$25 + 47 = 47 + \square$$

- A. 22 C. 47
 B. 25 D. 72

2. Which number makes this sentence true?

$$(8 + \square) + 45 = 8 + (55 + 45)$$

- A. 8 C. 55
 B. 45 D. 108

3. In three days, Mark read 75 pages, 32 pages, and 25 pages.

Mark used these steps to find the total number of pages.

$$\text{Step 1: } 75 + 32 + 25$$

$$\text{Step 2: } 75 + 25 + 32$$

$$\text{Step 3: } (75 + 25) + 32$$

$$\text{Step 4: } 100 + 32 = 132$$

Which names the properties of addition in the order that Mark used them?

- A. commutative and associative
 B. commutative and identity
 C. associative and commutative
 D. associative and identity

4. Which number makes the sentence true?

$$36 + 48 = 36 + 48 + \square$$

- A. 0 C. 36
 B. 1 D. 48

5. Use the properties of addition to find the sum.

$$235 + 187 + 0 + 165$$

- A. 477 C. 577
 B. 487 D. 587

6. Adara sold 24 raffle tickets Wednesday, 0 Thursday, and 37 Friday. Adara used these steps to find the number of tickets she sold.

$$\text{Step 1: } 24 + 0 + 37$$

$$\text{Step 2: } 24 + 37 + 0$$

$$\text{Step 3: } 24 + 37 = 61$$

Which names the properties of addition in the order that Adara used them?

- A. identity and commutative
 B. identify and associative
 C. commutative and associative
 D. commutative and identity

7. Which correctly shows the associative property of addition?
- A. $(45 + 27) + 23 = (27 + 45) + 23$
- B. $36 + 24 + 0 = 36 + 24$
- C. $(55 + 18) + 22 = 55 + (18 + 22)$
- D. $73 + 42 = 42 + 73$
8. The Bulldogs scored 12 goals in its first two games. The Terriers scored 12 goals in its first three games. Both teams scored 8 goals in its first game and 4 goals in its second game. How many points did the Terriers score in its third game?
- A. 0 C. 4
- B. 1 D. 8
9. Which correctly shows the identity property of addition?
- A. $28 + 15 = 15 + 28$
- B. $37 + 0 = 37$
- C. $(41 + 24) + 26 = 41 + (24 + 26)$
- D. $(37 + 18) + 23 = (18 + 37) + 23$
10. The scores of the two games that the Tigers and Lions played are equal. The Tigers scored 42 points in its first game and 59 points in its second game. The Lions scored 59 points in its first game. How many points did the Lions score in its second game?
- A. 17 C. 59
- B. 42 D. 101

11. Dante wrote this number sentence that is true.

$$156 + (244 + 328) = (156 + 244) + 328$$

- A. Which property of addition is shown?

- B. What is the sum?

- C. Explain why you might want to use this property to find the sum.

Patterns



Getting the Idea

A number **pattern** is a series of numbers or symbols that follows a rule.

The rule describes how the numbers are related.

The numbers in this pattern increase.

Rule: Add 5.

20 25 30 35 40 45

The numbers in this pattern decrease.

Rule: Subtract 2.

60 58 56 54 52 50

Example 1

What is the next number in this pattern?

3 6 9 12 ?

Strategy **Decide if the numbers increase or decrease.**
Find the rule of the pattern.

Step 1

Do the numbers increase or decrease?

The numbers increase.

Step 2

Find how many are between the first two numbers in the pattern.

Think: $3 + ? = 6$

$3 + \mathbf{3} = 6$

Try adding 3 to each number.

Step 3

Find the rule.

$3 + \mathbf{3} = 6$

$6 + \mathbf{3} = 9$

$9 + \mathbf{3} = 12$

Each number is 3 more than the number before it.

The rule is to add 3.

Step 4

Find the next number in the pattern.

Use the rule. Add 3 to 12.

$$12 + 3 = 15$$

Solution The next number in this pattern is 15.

You can find many patterns in an addition table.

For example, the sums in each row increase by 1 as you go from left to right.

+	1	2	3	4	5	6	7	8	9	10
1	2	3	4	5	6	7	8	9	10	11
2	3	4	5	6	7	8	9	10	11	12
3	4	5	6	7	8	9	10	11	12	13
4	5	6	7	8	9	10	11	12	13	14
5	6	7	8	9	10	11	12	13	14	15
6	7	8	9	10	11	12	13	14	15	16
7	8	9	10	11	12	13	14	15	16	17
8	9	10	11	12	13	14	15	16	17	18
9	10	11	12	13	14	15	16	17	18	19
10	11	12	13	14	15	16	17	18	19	20

There are even number patterns and odd number patterns.

An **even number** can be separated into two equal groups.

An even number has 0, 2, 4, 6, or 8 in the ones place.

An **odd number** has 1 left over after being separated into two equal groups.

An odd number has 1, 3, 5, 7, or 9 in the ones place.

When adding a number to itself, the sum is always an even number.

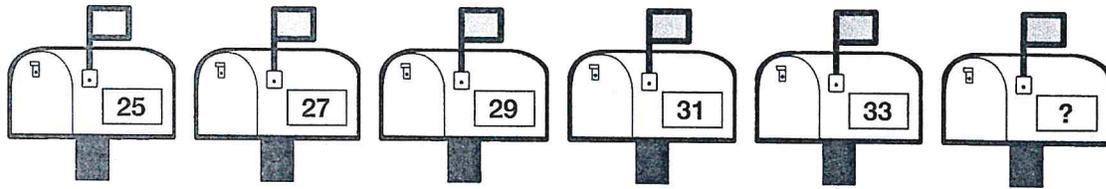
For example, $1 + 1 = 2$, $2 + 2 = 4$, $3 + 3 = 6$, and so on.

The boldface numbers in the table show this pattern.

When adding an even number to an odd number, the sum is always an odd number. For example, $3 + 6 = 9$ and $7 + 4 = 11$.

Example 2

Julia saw these mailboxes along one side of Poplar Street.



Which is most likely to be the number on the next mailbox?

Are the numbers on the mailboxes odd or even?

Strategy Find the rule of the pattern.

Step 1: Do the numbers increase or decrease?

The numbers increase.

Step 2: Find how many are between the first two numbers in the pattern.

Think: $25 + ? = 27$

$$25 + 2 = 27$$

Try adding 2 to each number.

Step 3: Find the rule.

$$25 + 2 = 27$$

$$27 + 2 = 29$$

$$29 + 2 = 31$$

$$31 + 2 = 33$$

Each number is 2 more than the number before it.

The rule is to add 2.

Step 4: Use the rule to find the next number.

$$33 + 2 = 35$$

Step 5: Decide if the numbers are odd or even.

All of the numbers have 1, 3, 5, 7, or 9 in the ones place.

So, the numbers are odd numbers.

Solution The number on the next mailbox is most likely 35.
The numbers are all odd numbers.

Example 3

What is the missing number in this pattern?

22 18 14 10 ? 2

Strategy Find the rule of the pattern.

Step 1

Do the numbers increase or decrease?

The numbers decrease.

Step 2

Find how many are between the first two numbers in the pattern.

Think: $22 - ? = 18$

$$22 - 4 = 18$$

Try subtracting 4 from each number.

Step 3

Find the rule.

$$22 - 4 = 18$$

$$18 - 4 = 14$$

$$14 - 4 = 10$$

Each number is 4 less than the number before it.

The rule is to subtract 4.

Step 4

Use the rule to find the missing number.

Subtract 4 from 10.

$$10 - 4 = 6$$

Step 5

Check to make sure the missing number is correct.

Subtract 4 from 6 to make sure the next number is 2.

$$6 - 4 = 2$$

Solution The missing number in this pattern is 6.



Coached Example

What is the next number in this pattern?

34 31 28 25 22 ?

Are the numbers in the pattern odd or even?

Do the numbers in the pattern increase or decrease? _____

Find how many are between the first two numbers.

31 is _____ less than 34.

Try subtracting _____ from each number.

$$34 - \underline{\quad\quad\quad} = \underline{\quad\quad\quad}$$

$$31 - \underline{\quad\quad\quad} = \underline{\quad\quad\quad}$$

$$28 - \underline{\quad\quad\quad} = \underline{\quad\quad\quad}$$

$$25 - \underline{\quad\quad\quad} = \underline{\quad\quad\quad}$$

The rule is _____.

Use the rule to find the next number in the pattern.

$$22 - \underline{\quad\quad\quad} = \underline{\quad\quad\quad}$$

The next number in the pattern is _____.

Decide if the numbers are odd or even.

Look at the _____ digit in each number.

The even numbers in the pattern are _____, _____, and _____.

The odd numbers in the pattern are _____, _____, and _____.

The numbers in the pattern are both _____ and _____.



Lesson Practice • Part 1

Choose the correct answer.

1. Which is the next number in this pattern?

1 3 5 7 9 ?

- A. 8
 B. 10
 C. 11
 D. 12

2. Which is the next number in this pattern?

4 8 12 16 20 ?

- A. 18
 B. 21
 C. 22
 D. 24

3. Marcus made a pattern using the rule add 5. Which could be Marcus's number pattern?

- A. 5 10 14 17 19 20
 B. 6 11 16 21 26 31
 C. 7 11 15 19 23 27
 D. 8 13 18 24 30 35

Use this number pattern for questions 4 and 5.

17 15 13 11 ? 7

4. What is the missing number in the pattern?

- A. 12
 B. 10
 C. 9
 D. 8

5. Which is true about the numbers in the pattern?

- A. All of the numbers are odd numbers.
 B. All of the numbers are even numbers.
 C. Three of the numbers are odd numbers.
 D. Only one number is an even number.

6. Which is the next number in the pattern?

7 13 19 25 31 ?

- A. 33 C. 37
 B. 35 D. 41

Use this number pattern for questions 7 and 8.

37 34 31 28 ? 22

7. Which is the missing number in the pattern?

- A. 27
- B. 25
- C. 24
- D. 23

8. Which is true about the numbers in this pattern?

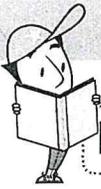
- A. All of the numbers are even numbers.
- B. All of the numbers are odd numbers.
- C. Only one number is an even number.
- D. Three of the numbers are odd numbers.

9. Maureen began a workout routine. Her workout was 15 minutes on the first day, 18 minutes on the second day, 21 minutes on the third day, 24 minutes on the fourth day, and 27 minutes on the fifth day.

A. The pattern of the workout minutes is 15, 18, 21, 24, 27.

If the pattern continues, how many minutes will Maureen's workout be on the sixth day? Explain your answer.

B. Are the numbers of workout minutes odd or even? Explain your answer.



Lesson Practice • Part 2

Choose the correct answer.

1. What are the missing numbers in the pattern?

37 43 49 _____ 61 67 _____

- A. 53 and 71
 B. 54 and 72
 C. 55 and 73
 D. 56 and 74

2. A pattern begins with an even number. Which rule will result in all of the numbers in the pattern being even?

- A. Add 3
 B. Add 4
 C. Add 5
 D. Add 7

3. What are the missing numbers in the pattern?

67 59 _____ 43 35 _____

- A. 53 and 29
 B. 52 and 28
 C. 51 and 27
 D. 50 and 26

4. A pattern begins with an odd number. Which rule will result in all of the numbers in the pattern being odd?

- A. Add 4
 B. Add 5
 C. Add 7
 D. Add 9

5. Which pattern uses the rule Add 6?

- A. 28 34 41 48 56
 B. 34 40 45 49 52
 C. 38 45 51 57 63
 D. 47 53 59 65 71

6. What is the missing number in the pattern?

72 61 50 _____ 28 17

- A. 31
 B. 39
 C. 41
 D. 49

7. A pattern begins with 7. The rule is to add 5. Which describes the first three numbers of the pattern?

- A. All of the numbers are even.
- B. All of the numbers are odd.
- C. Only the first and third numbers are even.
- D. Only the first and third numbers are odd.

8. A pattern begins with 19. The rule is to add 7. Which number is part of the pattern?

- A. 33
- B. 41
- C. 49
- D. 55

9. A pattern begins with 8. The rule is to add 7. Which describes the first three numbers of the pattern?

- A. All of the numbers are odd.
- B. All of the numbers are even.
- C. Only the first and third numbers are odd.
- D. Only the first and third numbers are even.

10. What are the missing numbers in the pattern?

24 33 42 _____ 60 _____

- A. 50 and 68
- B. 50 and 69
- C. 51 and 68
- D. 51 and 69

11. A hardware store has a truck rental fee of \$16 for 2 hours, \$24 for 3 hours, \$32 for 4 hours, and \$40 for 5 hours.

A. What rule is used to determine the truck rental fee?

B. What is the cost for a 6-hour rental? Explain your answer.

C. What is the cost for an 8-hour rental? Explain your answer.

Add Whole Numbers



Getting the Idea

When you **add**, you combine quantities.

Here are the parts to an addition sentence.

$$\begin{array}{ccccccc} 43 & + & 25 & = & 68 \\ \text{addend} & & \text{addend} & & \text{sum} \end{array}$$

You can write an addition problem in a column. Line up the digits on the ones place. Then add from right to left. When the sum of a column is 10 or greater, **regroup** 10 of one unit to 1 of the next greatest unit.

Example 1

Keisha has 231 trading cards. Her brother has 467 trading cards.

How many trading cards do they have in all?

Strategy Add to find how many cards in all.

Step 1

Write the addition problem in a column. Line up the addends by place value.

$$\begin{array}{r} 231 \\ + 467 \\ \hline \end{array}$$

Step 2

Add the ones.

$$1 \text{ one} + 7 \text{ ones} = 8 \text{ ones}$$

$$\begin{array}{r} 231 \\ + 467 \\ \hline 8 \end{array}$$

Step 3

Add the tens.

$$3 \text{ tens} + 6 \text{ tens} = 9 \text{ tens}$$

$$\begin{array}{r} 231 \\ + 467 \\ \hline 98 \end{array}$$

Step 4

Add the hundreds.

$$2 \text{ hundreds} + 4 \text{ hundreds} = 6 \text{ hundreds}$$

$$\begin{array}{r} 231 \\ + 467 \\ \hline 698 \end{array}$$

Solution Keisha and her brother have 698 trading cards in all.

Example 2

What is the sum of $524 + 197$?

Strategy Rewrite the addition problem in a column.
Then add from right to left.

Step 1

Add the ones.

$$4 \text{ ones} + 7 \text{ ones} = 11 \text{ ones}$$

Regroup 11 ones as 1 ten and 1 one.

$$\begin{array}{r} 1 \\ 524 \\ + 197 \\ \hline 1 \end{array}$$

Step 2

Add the tens. Remember to include the 1 regrouped ten.

$$1 \text{ ten} + 2 \text{ tens} + 9 \text{ tens} = 12 \text{ tens}$$

Regroup 12 tens as 1 hundred and 2 tens.

$$\begin{array}{r} 11 \\ 524 \\ + 197 \\ \hline 21 \end{array}$$

Step 3

Add the hundreds. Remember to include the 1 regrouped hundred.

$$1 \text{ hundred} + 5 \text{ hundreds} + 1 \text{ hundred} = 7 \text{ hundreds}$$

$$\begin{array}{r} 11 \\ 524 \\ + 197 \\ \hline 721 \end{array}$$

Solution $524 + 197 = 721$

You can use mental math to add numbers that end in 0. Use place value.

For example:

$$620 + 10 =$$

$$620 + 1 \text{ ten} = 630$$

$$620 + 300 =$$

$$620 + 3 \text{ hundreds} = 920$$

Example 3

What is $400 + 200$?

Strategy Use mental math.

Step 1

Which place value is being added?

hundreds

Step 2

Mentally add.

$$400 + 200 = 600$$

Solution $400 + 200 = 600$

Example 4

What is $295 + 349$?

Strategy Add to one addend what you subtract from the other.

Step 1 Add 5 to 295 and subtract 5 from 349.

$$295 + 5 = 300$$

$$349 - 5 = 344$$

Step 2 Add the new addends mentally.

$$300 + 344 = 644$$

Solution $295 + 349 = 644$



Coached Example

Rhea has 275 pennies in her jar. Tyler has 429 more pennies in his jar. How many pennies does Tyler have in his jar?

$$275 + 429 = \square$$

Change the first addend.

What number do you need to add to 275 to get 300? _____

Change the second addend.

What number do you need to subtract from 429 to keep the sum the same? _____

Mentally add the new addends.

$$\underline{\quad} + \underline{\quad} = \underline{\quad}$$

Tyler has _____ pennies in his jar.



Lesson Practice • Part 1

Choose the correct answer.

- What is $156 + 415$?
 - A. 571
 - B. 561
 - C. 541
 - D. 341
- Samantha is reading a book that is 631 pages long. Frank is reading a book that is 10 pages longer. How many pages are in Frank's book?
 - A. 621
 - B. 632
 - C. 641
 - D. 731
- What is the sum?

$$\begin{array}{r} 215 \\ + 498 \\ \hline \end{array}$$
 - A. 703
 - B. 713
 - C. 714
 - D. 723
- A town has two schools. There are 473 students at one school. The other school has 354 students. How many students are there at both schools?
 - A. 727
 - B. 827
 - C. 837
 - D. 927
- A band played two concerts. The first concert had 375 people. The second concert had 200 more people than the first concert. How many people attended the second concert?
 - A. 575
 - B. 475
 - C. 395
 - D. 385
- Find the sum.

$$436 + 115 = \square$$
 - A. 541
 - B. 551
 - C. 578
 - D. 587

7. Roger played a computer game twice. He scored 428 points in his first game. In the second game, he scored 559 points. How many points did Roger score in all?

- A. 887
- B. 967
- C. 977
- D. 987

8. What is $300 + 500$?

- A. 200
- B. 700
- C. 800
- D. 900

9. Ethel and Patsy have sticker collections. Ethel has 645 stickers in her collection. Patsy has 289 stickers in her collection.

A. How many stickers do Ethel and Patsy have in all?

B. Betty has 10 more stickers than Ethel. How many stickers does Betty have?



Lesson Practice • Part 2

Choose the correct answer.

- Missy and Jill played a board game. Missy scored 238 points. Jill scored 157 more points than Missy. How many points did Jill score?
 - A. 385
 - B. 395
 - C. 485
 - D. 495
- Which sentence about regrouping is true?
 - A. Regroup if the sum of a column is less than 10.
 - B. It is not necessary to regroup if the sum of a column is exactly 10.
 - C. Regroup if the sum of a column is greater than 9.
 - D. It is not necessary to regroup if the sum of a column is greater than 9.
- Which has the same sum as $387 + 528$?
 - A. $(387 + 13) + (528 - 13)$
 - B. $(387 + 13) + (528 + 13)$
 - C. $(387 + 28) + (528 + 28)$
 - D. $(387 - 28) + (528 - 28)$
- Jeff read two books last week. The first book Jeff read was 184 pages. The second book he read was 226 pages longer than the first. How many pages were the two books in all?
 - A. 400
 - B. 410
 - C. 584
 - D. 594
- Which of the following problems does **not** need any regrouping?
 - A. $342 + 464$
 - B. $371 + 518$
 - C. $383 + 408$
 - D. $417 + 292$
- What is the sum?

$$\begin{array}{r} 318 \\ 274 \\ + 289 \\ \hline \end{array}$$
 - A. 761
 - B. 771
 - C. 871
 - D. 881

7. Kelli is going to add $417 + 379$. Which describes how Kelli can change the addends to be able to mentally add?
- A. Kelli can subtract 17 from both addends.
 - B. Kelli can add 21 to both addends.
 - C. Kelli can subtract 17 from one addend and add 17 to the other addend.
 - D. Kelly can subtract 17 from one addend and add 21 to the other addend.

8. Edwin ran three sprints during practice. His first sprint was 175 yards, his second sprint was 150 yards, and his third sprint was 225 yards. What was the total distance that Edwin sprinted?
- A. 450 yards
 - B. 475 yards
 - C. 525 yards
 - D. 550 yards

9. The Lopez family drove 236 miles on Monday. They drove 178 more miles on Tuesday than they drove on Monday.

A. How many miles did the Lopez family drive on Tuesday?

B. How many miles did the Lopez family drive during the two days? Show your work.

Subtract Whole Numbers



Getting the Idea

When you **subtract**, you take away from a quantity.

Here are the parts of a subtraction sentence.

$$479 - 236 = 243$$

minuend subtrahend difference

You can write a subtraction problem in a column. Line up the digits on the ones place. Then subtract from right to left. Sometimes you may need to **regroup**.

Example 1

Jeff invited 62 guests to his party. 28 guests are adults. The rest are children. How many children did Jeff invite to his party?

Strategy Subtract to find how many guests are children.

Step 1

Write a subtraction problem in a column. Line up the digits on the ones place.

Since 8 is greater than 2, regroup 1 ten as 10 ones.

$$\begin{array}{r} 512 \\ \cancel{6}2 \\ - 28 \\ \hline \end{array}$$

Step 2

Subtract the ones.

$$12 \text{ ones} - 8 \text{ ones} = 4 \text{ ones}$$

$$\begin{array}{r} 512 \\ \cancel{6}2 \\ - 28 \\ \hline 4 \end{array}$$

Step 2

Subtract the tens.

$$\begin{array}{r} 5 \text{ tens} - 2 \text{ tens} = 3 \text{ tens} \\ 5 \ 12 \\ \cancel{0} \ \cancel{2} \\ - 2 \ 8 \\ \hline 3 \ 4 \end{array}$$

Solution Jeff invited 34 children to his party.

You can use addition to check the difference.

$$\begin{array}{r} 5 \ 12 \\ \cancel{0} \ \cancel{2} \\ - 2 \ 8 \\ \hline 3 \ 4 \end{array} \quad \begin{array}{r} 1 \\ 3 \ 4 \\ + 2 \ 8 \\ \hline 6 \ 2 \end{array}$$

Example 2

Aaron is reading a trilogy. He read 346 pages of the second book. He has 487 more pages to read to finish the book. The first book has 637 pages. How many more pages does the second book have than the first book?

Strategy First, add to find the number of pages in the second book. Then subtract to find how many more pages are in the second book.

Step 1

Write an addition sentence to find the number of pages in the second book.

Add the ones, then the tens, then the hundreds.
Regroup as needed.

$$\begin{array}{r} 1 \ 1 \\ 346 \\ + 487 \\ \hline 833 \end{array}$$

Aaron's second book has 833 pages.

Step 2

Write a subtraction sentence to find how many more pages are in the second book.

Subtract the ones, then the tens, then the hundreds.
Regroup as needed.

$$\begin{array}{r} 12 \\ 7 \cancel{2} 13 \\ \cancel{8} \cancel{3} \cancel{3} \\ - 6 \ 3 \ 7 \\ \hline 1 \ 9 \ 6 \end{array}$$

Solution The second book has 196 more pages than the first book.

You can use mental math to subtract a **multiple** of 10, 100, or 1,000.

Here are some examples.

When you subtract $750 - 10$, only the digit in the tens place of 750 will change. It will decrease by 1.

$$750 - 10 = 740$$

When you subtract $750 - 200$, only the digit in the hundreds place of 750 will change. It will decrease by 2.

$$750 - 200 = 550$$

Example 3

What is $900 - 300$?

Strategy Use mental math.

Step 1

Which place value will be subtracted?

hundreds

Step 2

Subtract mentally.

$$900 - 300 = 600$$

Solution $900 - 300 = 600$

Example 4

Emily's family is driving 903 miles to reach their vacation site. They have already driven 289 miles. How many more miles does Emily's family have left to drive?

Strategy Count up.

Count up from 289 to 290.

$$289 + 1 = 290$$

Count up from 290 to 300.

$$290 + 10 = 300$$

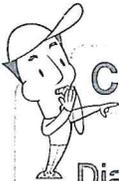
Subtract mentally.

$$903 - 300 = 603$$

Add the numbers you counted up to the difference.

$$1 + 10 + 603 = 614$$

Solution Emily's family has 614 more miles to go.



Coached Example

Diane counted 245 beads into a bowl. Zoe counted 10 less than Diane. How many beads did Zoe count?

Write a subtraction number sentence for the problem.

$$\underline{\hspace{2cm}} - \underline{\hspace{2cm}} = \square$$

Use mental math.

How many tens in 10? _____

Which digit will change in 245 when you subtract 1 ten? _____

The digit in the tens place is _____. It will decrease by _____.

Mentally subtract.

Zoe counted _____ beads.



Lesson Practice • Part 1

Choose the correct answer.

- Neil has 373 CDs. Marcia has 229 CDs. How many more CDs does Neil have than Marcia?
 - A. 144
 - B. 145
 - C. 154
 - D. 155
- Find the difference.

$$474 - 392 = \square$$
 - A. 82
 - B. 92
 - C. 122
 - D. 766
- José had 250 raffle tickets to sell. There are 20 tickets left. How many tickets has José sold?
 - A. 230
 - B. 240
 - C. 270
 - D. 450
- A movie theater sold 692 tickets to the evening show. It sold 385 tickets to the afternoon show. How many more tickets were sold for the evening show than the afternoon show?
 - A. 207
 - B. 217
 - C. 307
 - D. 317
- What is $514 - 100$?
 - A. 314
 - B. 414
 - C. 614
 - D. 714
- A town has two schools. There are 473 students at Smith School. Washington School has 354 students. How many more students are at Smith School than at Washington School?
 - A. 119
 - B. 127
 - C. 129
 - D. 827

7. Henry has 570 baseball cards. Tom has 40 less baseball cards than Henry. How many baseball cards does Tom have?

- A. 170
- B. 470
- C. 520
- D. 530

8. Find the difference.

$$301 - 148 = \square$$

- A. 153
- B. 162
- C. 262
- D. 449

9. A concert was held in an auditorium with 600 seats. For last night's show, 584 tickets were sold. Each ticket is good for 1 seat.

A. How many tickets were not sold?

B. There were 26 people with tickets who did not make it to last night's show. How many empty seats were in the auditorium last night? Show your work.



Lesson Practice • Part 2

Choose the correct answer.

- Daphne is reading a book that is 526 pages long. She had read 245 pages. How many more pages does Daphne have to read to finish the book?
 - A. 271
 - B. 281
 - C. 321
 - D. 371
- A museum had 174 visitors on Monday, 267 visitors on Tuesday, and 513 visitors on Wednesday. How many more visitors did the museum have on Wednesday than on Monday and Tuesday combined?
 - A. 72
 - B. 182
 - C. 441
 - D. 954
- Which has the same difference as $723 - 389$?
 - A. $(723 - 11) - (389 + 11)$
 - B. $(723 + 11) - (389 + 11)$
 - C. $(723 + 23) - (389 - 23)$
 - D. $(723 - 23) - (389 + 23)$
- In the Election of 1948, Harry Truman received 303 electoral votes. Thomas Dewey received 189 and Strom Thurmond received 39 electoral votes. How many more electoral votes did Harry Truman have than the other candidates combined?
 - A. 75
 - B. 114
 - C. 228
 - D. 264
- Martin delivered 348 newspapers last week. Of those newspapers, he delivered 95 on Sunday. Which describes a way to find the number of newspapers that Martin delivered other than Sunday?
 - A. Add 5 to 348 and subtract 5 from 95 and then subtract the results.
 - B. Add 48 to 348 and subtract 48 from 95 and then subtract the results.
 - C. Subtract 48 from 348 and add 48 to 143 and then subtract the results.
 - D. Add 5 to 348 and add 5 to 95 and then subtract the results.

6. It takes Mars 687 days to revolve around the Sun. It takes Mercury 599 fewer days than Mars to revolve around the Sun. How many days does it take Mercury to revolve around the Sun?

- A. 88 days
- B. 98 days
- C. 188 days
- D. 198 days

7. The Pioneers football team scored 236 points this season. They allowed 87 points. How many more points did the Pioneers score than allow?

- A. 159
- B. 151
- C. 149
- D. 141

8. Grace has 272 fewer stamps than Asher. Asher has 85 fewer stamps than Desmond. Desmond has 531 stamps.

A. How many stamps does Asher have?

B. How many stamps does Grace have? Show your work.

Round Whole Numbers



Getting the Idea

You can round a number to the nearest ten or hundred.

Example 1

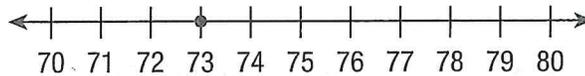
The dance recital was 73 minutes long. To the nearest ten minutes, about how long was the dance recital?

Strategy Use a number line. Round to the nearest ten.

Step 1

Make a number line from 70 to 80.

Find 73 on the number line.



Step 2

Decide if 73 is closer to 70 or to 80.

73 is closer to 70 than to 80.

Round 73 down to 70.

Solution To the nearest ten, the dance recital was about 70 minutes long.

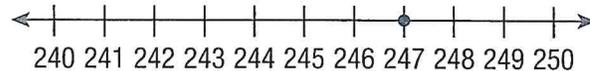
Example 2

John is reading a book with 247 pages. To the nearest ten, about how many pages long is the book?

Strategy Use a number line to help you round to the nearest ten.

Make a number line from 240 to 250.

Find 247 on the number line.



Decide if 247 is closer to 240 or 250.

247 is closer to 250.

Round 247 up to 250.

Solution To the nearest ten, the book is about 250 pages long.

You can also use **rounding rules** to round numbers.

When you use rounding rules, look at the place to the right of the place you are rounding to.

- If the digit is less than 5 (1, 2, 3, or 4), round down.
- If the digit is 5 or greater (5, 6, 7, 8, or 9), round up.

Example 3

A basket has 193 apples. To the nearest hundred, about how many apples are in the basket?

Strategy Use rounding rules to round to the nearest hundred.

The digit in the hundreds place is 1.

The digit to the right of the hundreds place is 9.

193

Use rounding rules.

$9 > 5$, so round up.

193 rounded to the nearest hundred is 200.

Solution To the nearest hundred, there are about 200 apples in the basket.



Coached Example

Which is the greater number?

742 rounded to the nearest hundred

718 rounded to the nearest ten

Round 742 to the nearest hundred.

The digit in the hundreds place is _____.

The digit to the right of the rounding place is _____.

4 ○ 5

Should you round 742 up or down? _____

To the nearest hundred, 742 rounds to _____.

Round 718 to the nearest ten.

The digit in the tens place is _____.

The digit to the right of the rounding place is _____.

8 ○ 5

Should you round 718 up or down? _____

To the nearest ten, 718 rounds to _____.

Compare the rounded numbers.

_____ < _____

_____ rounded to the nearest _____ is the greater number.



Lesson Practice Part 1

Choose the correct answer.

- Which shows 67 rounded to the nearest ten?
 A. 60
 B. 65
 C. 70
 D. 100
- A store has 38 items on sale this week. To the nearest ten, about how many items are on sale at the store?
 A. 40
 B. 38
 C. 35
 D. 30
- An amusement park had 276 visitors one day. To the nearest ten, about how many visitors did the park have that day?
 A. 200
 B. 270
 C. 280
 D. 300
- Which shows 112 rounded to the nearest hundred?
 A. 100
 B. 110
 C. 120
 D. 130
- Ms. Cannon bowled a 185. What was her score to the nearest hundred?
 A. 100
 B. 190
 C. 200
 D. 300
- Anthony collected 778 signatures for a petition. To the nearest hundred, about how many signatures did he collect?
 A. 700
 B. 780
 C. 800
 D. 1,000

7. Which is the greatest number?

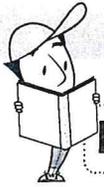
- A. 503 rounded to the nearest ten
- B. 474 rounded to the nearest hundred
- C. 585 rounded to the nearest ten
- D. 570 rounded to the nearest hundred

8. To the nearest hundred, which number does **not** round to 400?

- A. 348
- B. 372
- C. 419
- D. 446

9. A candy store is running a promotion where customers can guess the number of jelly beans in a jar and win a prize. If customers guess the number to the nearest 10 or 100, they also receive smaller prizes. There are 838 jelly beans in the jar.

- A. To the nearest ten how many jelly beans are in the jar? _____
- B. To the nearest hundred how many jelly beans are in the jar? _____



Lesson Practice Part 2

Choose the correct answer.

- To the nearest ten, which number rounds to 340?
 A. 331
 B. 334
 C. 339
 D. 345
- What is the greatest number that rounds to 100?
 A. 199
 B. 149
 C. 109
 D. 104
- Dave said that 632 rounds to 630 to the nearest ten. Mary Ellen said that 632 rounds to 700 to the nearest hundred. Who is correct?
 A. Dave only
 B. Mary Ellen only
 C. They are both correct.
 D. Neither is correct.
- The newspaper reported about 500 people attended a parade. If the reporter rounded to the nearest 10, how many people could have attended the parade?
 A. 457 C. 503
 B. 492 D. 541
- Which number rounds to 400 to the nearest ten and to the nearest hundred?
 A. 386 C. 394
 B. 391 D. 404
- Pete, Paul, and Dan are playing a game where the person who scores the most points wins. They will round their scores to the nearest ten before determining who won. Before they rounded, Pete had 287, Paul had 278, and Dan had 292. Who won the game?
 A. Pete
 B. Paul
 C. Dan
 D. Pete and Dan tied.

7. What is the difference between the greatest whole number and least whole number that rounds to 780 to the nearest ten?
- A. 9
- B. 10
- C. 18
- D. 19
8. Which number can **not** round to 600 either to the nearest ten or to the nearest hundred?
- A. 547
- B. 551
- C. 598
- D. 639

9. Curtis wears a uniform number that rounds to 50 to the nearest ten and 0 to the nearest hundred.

A. What is the least uniform number that Curtis can have?

B. What is the greatest uniform number that Curtis can have? Explain your reasoning.

Estimate Sums and Differences



Getting the Idea

You can **estimate** sums or differences in problems. An estimate is a number close to the exact answer.

Example 1

Estimate the sum.

$$42 + 38 + 54$$

Strategy Round each number to the greatest place. Then add.

Find the greatest place of each number.

The greatest place of each number is the tens place.

Round each number to the nearest ten.

42 rounds down to 40 because $2 < 5$.

38 rounds up to 40 because $8 > 5$.

54 rounds down to 50 because $4 < 5$.

Add the rounded numbers.

$$40 + 40 + 50 = 130$$

Solution The estimated sum of $42 + 38 + 54$ is 130.

Example 2

Polk Elementary School has 413 students. Grant Elementary School has 278 students. About how many more students attend Polk Elementary School than Grant Elementary School?

Strategy Decide if you need an exact answer or an estimate. Then solve.

Decide if you need an exact answer or an estimate.

The problem asks “about how many,” so estimate.

Step 2

Round each number to the greatest place.

The greatest place of each number is the hundreds place.

413 rounds down to 400 because $1 < 5$.

278 rounds up to 300 because $7 > 5$.

Step 3

Decide if you need to add or subtract.

The problem asks “about how many more,” so subtract.

$$400 - 300 = 100$$

Solution About 100 more students attend Polk Elementary School than Grant Elementary School.

You can use estimation to check if an answer is reasonable, or if the answer makes sense.

Example 3

Molly has \$87 in her wallet. She bought a pair of pants for \$32. She said she has about \$30 left. Is Molly’s answer reasonable?

Strategy Round each number to the greatest place. Then subtract.

Step 1

Decide how to solve the problem.

Estimate to see if Molly’s answer is reasonable.

“She has about \$30 left” tells you to subtract.

Estimate the difference of $\$87 - \32 .

Step 2

Round each amount to the nearest ten dollars. Then subtract.

\$87 rounds up to \$90. \$32 rounds down to \$30.

$$\$90 - \$30 = \$60$$

Step 3

Compare the difference to Molly’s answer.

\$60 is not close to \$30.

Solution Molly’s answer is not reasonable.

When you solve a problem, it is helpful to estimate the answer before you find the exact answer. Then use the estimate to check if the exact answer is reasonable.

Example 4

Yesterday, a museum had 718 visitors. Today, the museum had 95 more visitors than yesterday. How many visitors did the museum have today?

Strategy Find an estimate first.
Then compare the estimate to the exact answer.

Step 1 Decide how to solve the problem.
“95 more visitors than yesterday” tells you to add.

Step 2 Estimate the sum of $718 + 95$.
718 rounds down to 700.
95 rounds up to 100.
 $700 + 100 = 800$
The answer should be about 800.

Step 3 Find the exact sum of $718 + 95$.

$$\begin{array}{r} 11 \\ 718 \\ + 95 \\ \hline 813 \end{array}$$

Step 4 Compare the exact answer to the estimate.
813 is close to 800.
The answer is reasonable.

Solution The museum had 813 visitors today.



Coached Example

Mr. Mitchell bought a computer that cost \$482. He also bought a printer that cost \$117. How much did Mr. Mitchell spend in all?

Decide how to solve the problem.

“How much did Mr. Mitchell spend in all?” tells you to _____.

Estimate the sum of \$_____ + \$_____.

Round each number to the greatest place.

\$482 rounds up to \$_____.

\$117 rounds down to \$_____.

Add the rounded amounts.

\$_____ + \$_____ = \$_____

The answer should be about \$_____.

Find the exact sum.

Compare the exact answer to the estimate.

Is the exact amount close to the estimate? _____

Is your exact answer reasonable? _____

Mr. Mitchell spent \$_____ in all.



Lesson Practice • Part 1

Choose the correct answer.

- Which shows the best way to estimate the sum?
 $82 + 59 + 25$
 A. $80 + 50 + 30$
 B. $60 + 60 + 60$
 C. $70 + 50 + 20$
 D. $80 + 60 + 30$
- Which is the best estimate of the sum?
 $184 + 245$
 A. 300
 B. 400
 C. 600
 D. 750
- Which shows the best way to estimate the difference?
 $613 - 178$
 A. $500 - 200$
 B. $600 - 100$
 C. $500 - 200$
 D. $600 - 200$
- Which is the best estimate of the difference?
 $404 - 159$
 A. 50
 B. 100
 C. 200
 D. 400
- A farmer planted 83 tomato seeds and 76 pumpkin seeds. Which is the best estimate of the number of seeds the farmer planted in all?
 A. 160
 B. 200
 C. 260
 D. 300
- Ms. Jenkins spent \$94 on a chair and \$185 on a table. About how much more did the table cost than the chair?
 A. \$50
 B. \$100
 C. \$150
 D. \$200

7. John is reading a book with 332 pages. He has read 128 pages. Which can you use to check if the answer is reasonable?
- A. $300 + 100$
 - B. $300 - 200$
 - C. $300 - 100$
 - D. $400 - 100$
8. An amusement park had 376 visitors in the morning. The park had another 145 visitors in the evening. About how many visitors did the park have that day?
- A. 200
 - B. 300
 - C. 400
 - D. 500

9. Each month, Mr. Adam pays \$695 in rent and \$318 for his car payment.

A. About how much more is his rent than his car payment? Show your work.

B. Exactly how much more is Mr. Adam's rent than his car payment?

Explain how you know your answer is reasonable.



Lesson Practice Part 2

Choose the correct answer.

- Sara had \$82. She bought a soccer jersey for \$49. Which is the best estimate of the amount of money that Sara has left?
 A. \$50 C. \$30
 B. \$40 D. \$20
- Which is the best estimate for the sum of $236 + 378 + 217$?
 A. 700 C. 900
 B. 800 D. 1,000
- Nick estimated the difference of $351 - 349$ as 100. Which sentence is true?
 A. Nick rounded to the nearest ten and gave the best estimate.
 B. Nick rounded to the nearest ten, but would have given a better estimate by rounding to the nearest hundred.
 C. Nick rounded to the nearest hundred and gave the best estimate.
 D. Nick rounded to the nearest hundred, but would have given a better estimate by rounding to the nearest ten.
- Ms. Wilson had \$812. She bought a computer for \$597 and a printer for \$89. Which is the best estimate for the amount of money that Ms. Wilson has left?
 A. \$100
 B. \$200
 C. \$300
 D. \$400
- Camila bowled 186, 205, and 197. Camila said she bowled about 400 in all and gave the best possible estimate. Which sentence is true?
 A. Camila is correct because she correctly rounded each number to the nearest ten.
 B. Camila is correct because she correctly rounded each number to the nearest hundred.
 C. Camila is incorrect. An estimate of 600 would have been best.
 D. Camila is incorrect. An estimate of 700 would have been best.

6. Joe wants to buy a jacket for \$82 and a shirt for \$37. Joe wants to know if \$120 is enough money to buy both. Without finding the exact sum, which sentence is true?
- A. Joe has enough money because the estimate of the costs is \$100.
 - B. Joe has enough money because the estimate of the costs is \$120.
 - C. Joe might have enough money because the estimate of the costs is \$120.
 - D. Joe does not have enough money because the estimate of the costs is \$140.
7. Sami estimated the sum of $451 + 459$ as 1,000. Which sentence is true?
- A. Sami rounded to the nearest ten and gave the best estimate.
 - B. Sami rounded to the nearest ten, but would have given a better estimate by rounding to the nearest hundred.
 - C. Sami rounded to the nearest hundred and gave the best estimate.
 - D. Sami rounded to the nearest hundred, but would have given a better estimate by rounding to the nearest ten.

8. Michele said that when estimating a sum, it is always better to round to the nearest ten than to the nearest hundred.

A. What is $293 + 204$ rounded to the nearest ten?

B. What is $293 + 204$ rounded to the nearest hundred?

C. Is Michele correct? Explain your reasoning.

Domain 1: Cumulative Assessment for Lessons 1–8

- Isa made a chain that is 1,204 paper clips long. Rosita made a chain that is 100 paper clips longer. How many paper clips are in Rosita's chain?
 - 1,104
 - 1,304
 - 1,314
 - 2,204
- Lincoln Elementary sold 3,124 raffle tickets for the fair. Union Elementary sold 2,193 raffle tickets. How many more raffle tickets did Lincoln Elementary sell than Union Elementary?
 - 41
 - 831
 - 931
 - 1,031
- Which of the following is true?
 - $1,274 = 1,742$
 - $2,951 > 2,995$
 - $1,803 < 1,903$
 - $2,273 < 2,172$
- Lana and Ernie built two block towers. The first tower had 281 blocks. The second tower had 100 more blocks than the first tower. How many blocks were in the second tower?
 - 381
 - 271
 - 270
 - 181
- What is $4,108 - 1,000$?
 - 5,108
 - 4,008
 - 3,108
 - 3,107
- Which shows 862 rounded to the nearest hundred?
 - 800
 - 860
 - 870
 - 900