

Unit **7**

# Adding and Subtracting Within 1,000

## Essential Questions

- How can we use what we know about place value to add and subtract within 1,000?
- When and how do we compose or decompose a hundred or a ten?
- How can we choose and explain strategies for adding and subtracting within 1,000?



### Unit Story: Where Eli Went

You can read the Unit Story with your student by visiting the Unit Story page on the Caregiver Hub.

## Unit Investigation

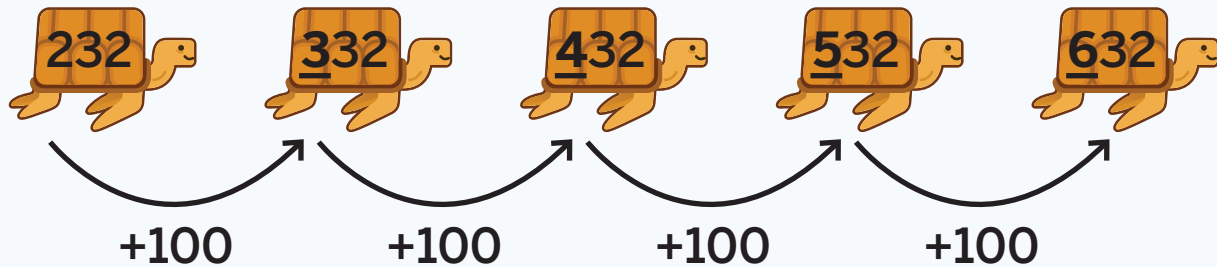
**Lesson 1** is the Unit Investigation. Students determine possible addends that are equal to a given sum to build curiosity and apply their own knowledge in a variety of ways. Use the **Caregiver Connection** to help students continue to explore the math they will see in the unit.

### Caregiver Connection

Students may enjoy naming, writing, or adding numbers within 1,000. Consider asking students questions about how they could add large numbers of objects at home, such as craft items (e.g., beads, buttons), coins in piggy banks, small toys, or dried goods in jars (e.g., beans or seeds).

You can use what you know about place value and counting on by 10 or 100 to add amounts of tens and hundreds to three-digit numbers.

$$232 + 400 = \underline{632}$$



## Try This

For Problems 1 and 2, fill in the number pattern.

- 1** Count on by 10, starting at 812.

812, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

- 2** Count on by 100, starting at 403.

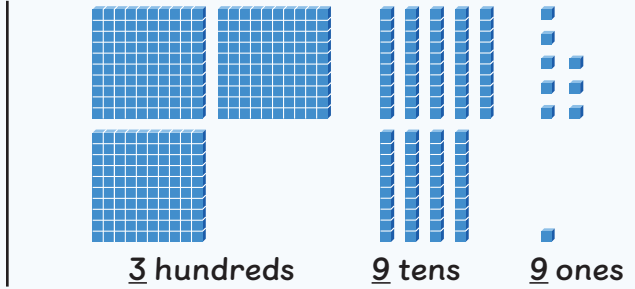
403, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

When adding numbers within 1,000, you can count on or add by place. When you add by place, add hundreds to hundreds, tens to tens, and ones to ones.

## Counting on



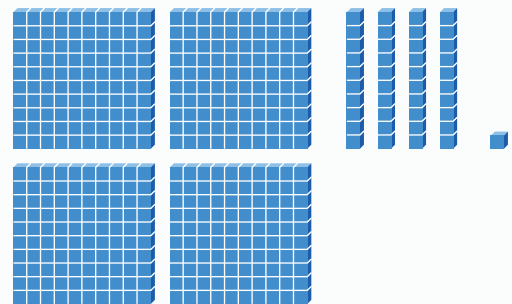
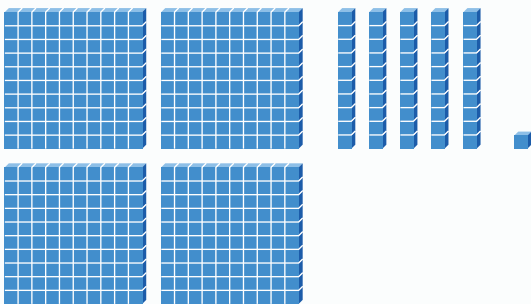
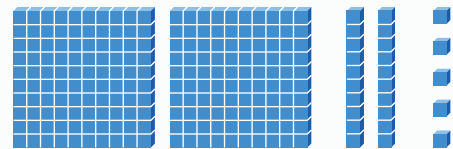
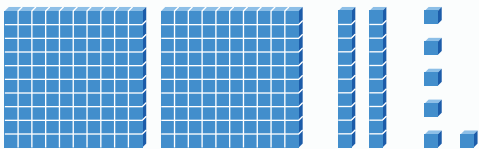
## Adding by place



$$258 + 141 = \underline{399}$$

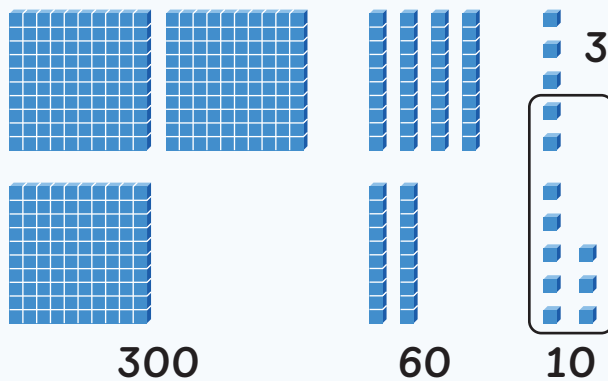
## Try This

- Circle the base-ten blocks that represent the equation  $226 + 451 = 677$ .



When adding by place, you need to compose a ten if there are 10 or more ones. The digit in the ones place of each addend can help you decide if you need to compose a ten.

$$24\underline{5} + 12\underline{8} = 373$$



## Try This

For Problems 1 and 2, use the addition expression.

$$639 + 129$$

**1** Will you need to compose a ten to find the sum? Write *yes* or *no*. \_\_\_\_\_

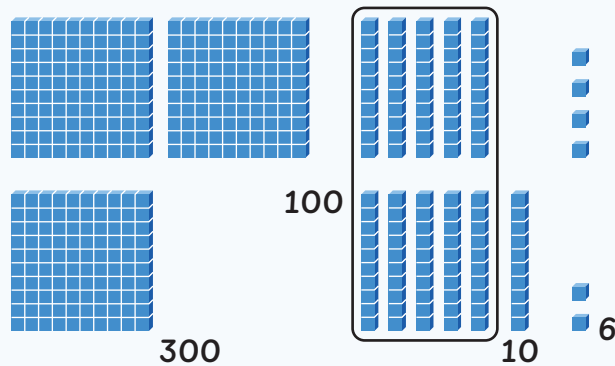
**2** Find the sum. Use base-ten blocks if it is helpful.

**i** Show or explain your thinking.

answer: \_\_\_\_\_

When adding by place, you need to compose a hundred if there are 10 or more tens. The digit in the tens place of each addend can help you decide if you need to compose a hundred before finding the sum.

$$254 + 162 = 416$$



## Try This

For Problems 1 and 2, use the addition expression.

$$397 + 252$$

**1** Will you need to compose a hundred to find the sum? Write *yes* or *no*. \_\_\_\_\_

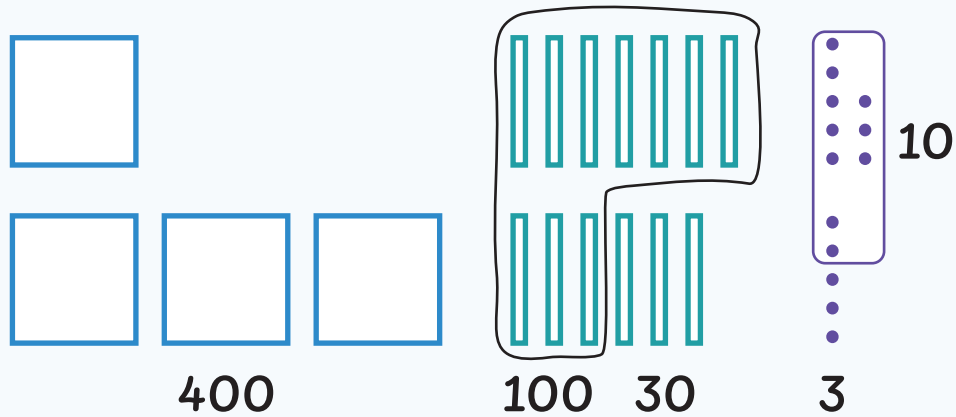
**2** Find the sum. Use base-ten blocks if it is helpful.

**i** Show or explain your thinking.

answer: \_\_\_\_\_

It is important to consider all place values when adding by place. Sometimes, you need to compose a ten and a hundred to find the sum.

$$178 + 365 = 543$$



## Try This

- 1 Find the sum.

$$479 + 328$$

 Show your thinking.

answer: \_\_\_\_\_

Equations can be used to represent your thinking when adding within 1,000. When adding by place, the hundreds, tens, and ones can be added in any order.

## 183 + 248

Adding hundreds first:

$$\begin{aligned} 100 + 200 &= 300 \\ 80 + 40 &= 120 \\ 3 + 8 &= 11 \\ 300 + 120 + 11 &= \underline{431} \end{aligned}$$

Adding ones first:

$$\begin{aligned} 3 + 8 &= 11 \\ 80 + 40 &= 120 \\ 100 + 200 &= 300 \\ 11 + 120 + 300 &= \underline{431} \end{aligned}$$

## Try This

- 1 Find the sum of  $456 + 225$ . Show your thinking with equations.

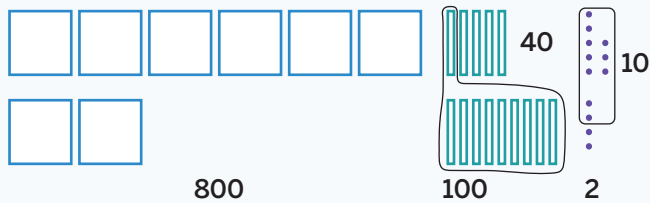
 Show your thinking.

answer: \_\_\_\_\_

# Summary | Lesson 8

When adding within 1,000, you can represent your thinking with base-ten diagrams or equations.

$$658 + 294$$



$$800 + 100 + 40 + 10 + 2 = 952$$

$$\begin{aligned} 600 + 200 &= 800 \\ 50 + 90 &= 140 \\ 8 + 4 &= 12 \end{aligned}$$

$$800 + 140 + 12 = 952$$

## Try This

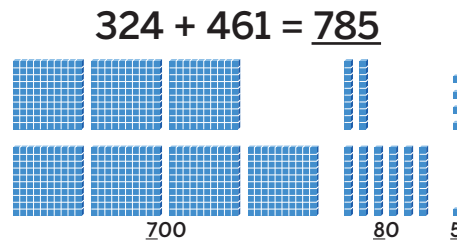
- 1 Find the sum of  $105 + 296$ .

 Show or explain your thinking.

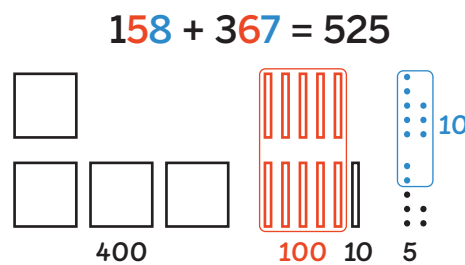
answer: \_\_\_\_\_

## In this sub-unit . . .

- We noticed that when adding within 1,000 by place, we add hundreds with hundreds, tens with tens, and ones with ones.



- We saw that when adding within 1,000, sometimes we need to compose a ten, a hundred, or both.



**Math tip:** You can figure out if you need to compose by looking at the digits in the tens and ones places of each number before solving.

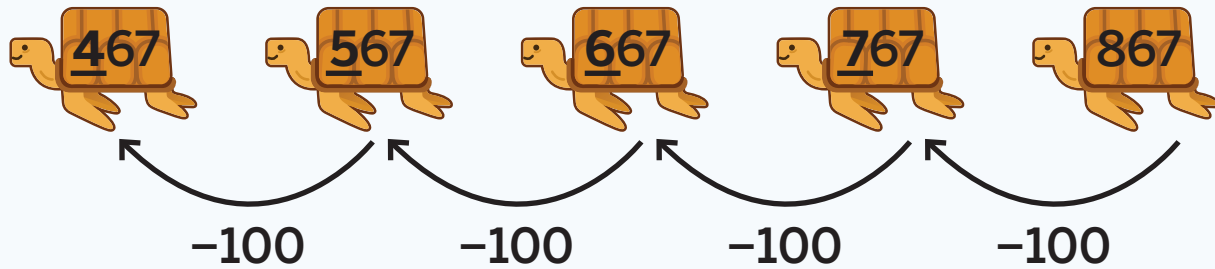
- We represented strategies for adding within 1,000 with base-ten blocks, base-ten diagrams, and equations.

$$\begin{aligned}
 389 + 572 &= 961 \\
 300 + 500 &= 800 \\
 80 + 70 &= 150 \\
 9 + 2 &= 11 \\
 800 + 150 + 11 &= 961
 \end{aligned}$$

**Math tip:** You can use your representation to explain why your strategy works.

You can use what you know about place value and counting back by 10 or 100 to subtract amounts of tens and hundreds from three-digit numbers.

$$867 - 400 = \underline{467}$$



## Try This

For Problems 1 and 2, fill in the number pattern.

- 1 Count back by 10, starting at 395.

395, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

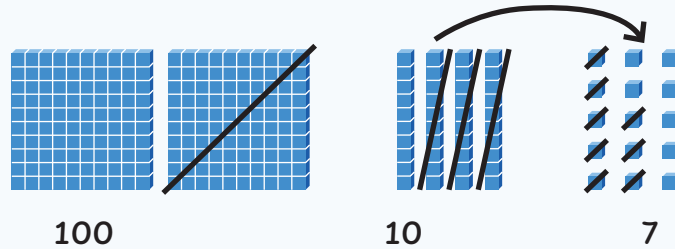
- 2 Count back by 100, starting at 918.

918, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_



When subtracting by place, you need to decompose a ten if the amount of ones you are taking away is greater than the amount of ones you have. The digit in the ones place of each number can help you decide if you need to decompose a ten.

$$245 - 128 = 117$$



## Try This

For Problems 1 and 2, use the subtraction expression.

$$543 - 129$$

- 1 Will you need to decompose a ten to find the difference? Write *yes* or *no*. \_\_\_\_\_
- 2 Find the difference. You can use base-ten blocks if it is helpful.

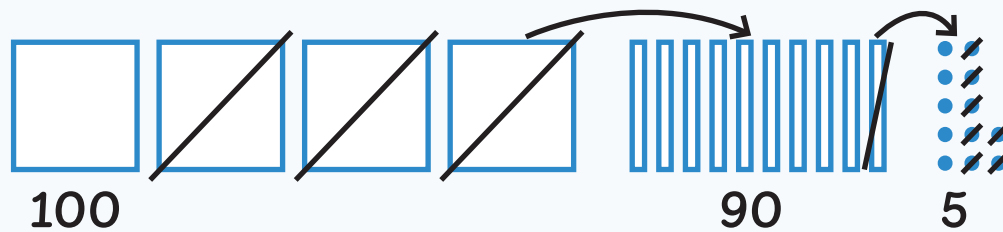
 Show or explain your thinking.

answer: \_\_\_\_\_



Consider all place values when subtracting by place. Sometimes, you need to decompose a ten and a hundred to find the difference.

$$402 - 207 = 195$$



## Try This

- 1 Find the difference. Draw a base-ten diagram to show your thinking.

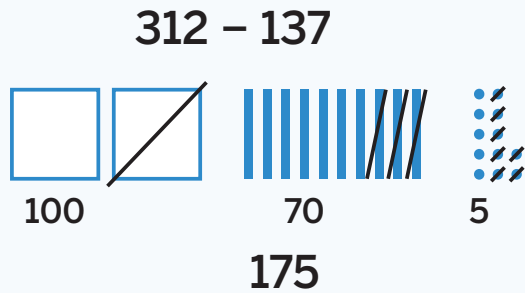
$$763 - 368$$

 Show your thinking.

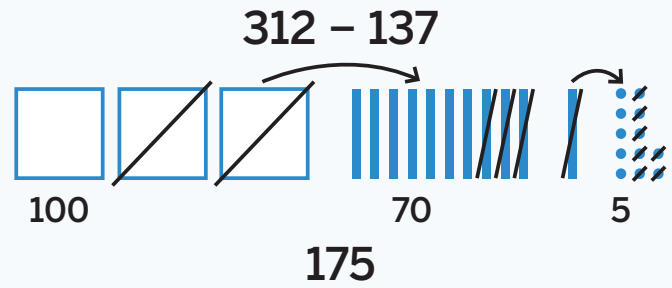
answer: \_\_\_\_\_

You can subtract by place by decomposing before subtracting or decomposing while subtracting.

### Decompose before subtracting



### Decompose while subtracting



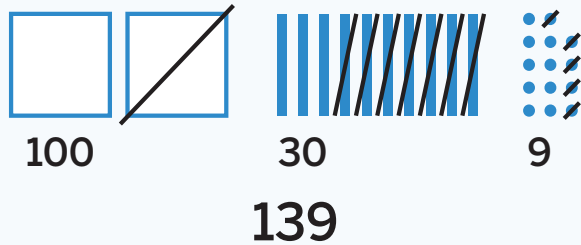
## Try This

- Find the difference of  $352 - 164$ .

**i** Show or explain your thinking.

answer: \_\_\_\_\_

Base-ten diagrams and equations can be used to show strategies when subtracting by place.



$$314 - 175$$

$$314 = 200 + 100 + 14$$

$$200 - 100 = 100$$

$$100 - 70 = 30$$

$$14 - 5 = 9$$

$$100 + 30 + 9 = 139$$

## Try This

- 1 Find the difference of  $612 - 533$ . Show your thinking using drawings or equations.

 Show your thinking.

answer: \_\_\_\_\_



When adding up to 4 two-digit numbers, it can be helpful to rearrange the addends. Sometimes, you need to compose more than 1 ten and more than 1 hundred when finding the sum.

$$66 + 88 + 14 + 52 = 220$$

$$66 + 14$$

$$88 + 52$$

$$6 + 4 = 10$$

$$8 + 2 = 10$$

$$80 + 140 = 220$$

$$60 + 10 + 10 = 80$$

$$80 + 50 + 10 = 140$$

## Try This

1 Find the sum of  $97 + 96 + 15 + 34$ .

 Show your thinking.

answer: \_\_\_\_\_

It can be helpful to think about the addends in an addition problem before choosing a strategy to find the sum. Depending on the addends, one strategy may be more helpful than another.

$$628 + 299$$

### Adding by place

$$\begin{aligned} 600 + 200 &= 800 \\ 20 + 90 &= 110 \\ 8 + 9 &= 17 \\ 800 + 110 + 17 &= 927 \end{aligned}$$

### Changing an addend and adjusting the sum

$$\begin{aligned} 628 + 300 &= 928 \\ 928 - 1 &= 927 \end{aligned}$$

## Try This

- 1 Find the sum of  $589 + 105$ .

 Show or explain your thinking.

answer: \_\_\_\_\_

It can be helpful to think about the numbers in a subtraction problem before choosing a strategy to find the difference. Depending on the numbers, one strategy may be more helpful than another.

$$608 - 567$$

### Subtracting by place

$$\begin{aligned} 608 &= 500 + 100 + 8 \\ 500 - 500 &= 0 \\ 100 - 60 &= 40 \\ 8 - 7 &= 1 \\ 40 + 1 &= 41 \end{aligned}$$

### Counting up

$$\begin{aligned} 567 + 3 &= 570 \\ 570 + 30 &= 600 \\ 600 + 8 &= 608 \\ 3 + 30 + 8 &= 41 \end{aligned}$$

## Try This

- 1 Find the difference of  $619 - 593$ .

 Show or explain your thinking.

answer: \_\_\_\_\_

You can use different strategies to make reasonable estimates of sums or differences. Estimating can help you figure out if your answer is reasonable before and after you solve.

$$374 + 128$$

## Estimate

374 is about 400, and 128 is about 100.  $400 + 100$  is 500, so I estimate the sum will be about 500.

estimate: about 500

## Answer

My answer makes sense because I estimated the sum would have 5 hundreds.

$$374 + 128 = \underline{502}$$

## Try This

- 1 Estimate the difference of  $419 - 226$ . Explain your thinking.

estimate: \_\_\_\_\_

---

---

---

### In this sub-unit . . .

- We added up to 4 two-digit numbers and saw that, sometimes, more than 1 ten and more than 1 hundred need to be composed.

$$58 + 94 + 42 + 86 = 280$$

$58 + 42$	$86 + 94$
$8 + 2 = 10$	$86 + 4 = 90$
$50 + 40 + 10 = 100$	$90 + 90 = 180$
	$100 + 180 = 280$

🔥 **Math tip:** It can be helpful to use the Associative Property of Addition to find the sum of 4 two-digit numbers.

---

- We noticed that we can use different strategies to add and subtract within 1,000.

$613 + 199 = 812$	$525 - 459 = 66$
$613 + 200 = 813$	$525 - 25 = 500$
$813 - 1 = 812$	$500 - 40 = 460$
	$460 - 1 = 459$
	$25 + 40 + 1 = 66$

🔥 **Math tip:** It can be helpful to think about the numbers in an addition or subtraction problem before choosing a strategy to solve.

# Try This | Answer Key

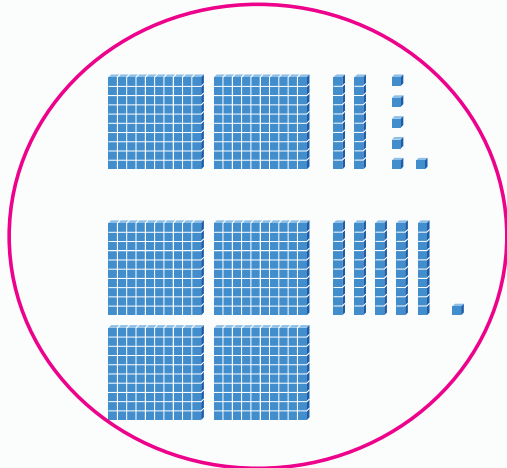
## Lesson 2

1 822, 832, 842, 852

2 503, 603, 703, 803

## Lesson 3

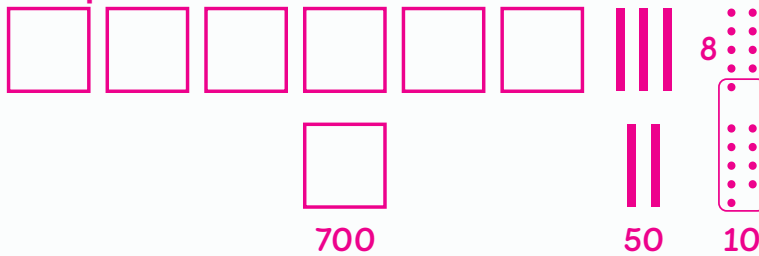
1



## Lesson 4

1 yes

2 Sample work shown.

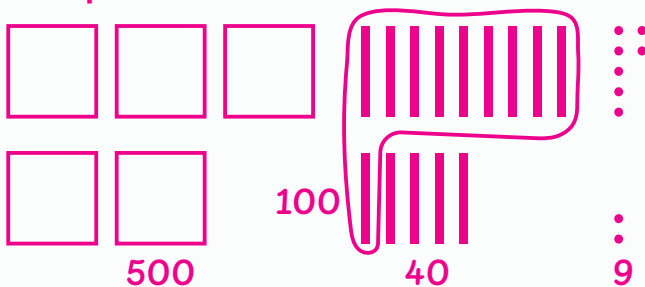


answer: 768

## Lesson 5

1 yes

2 Sample work shown.

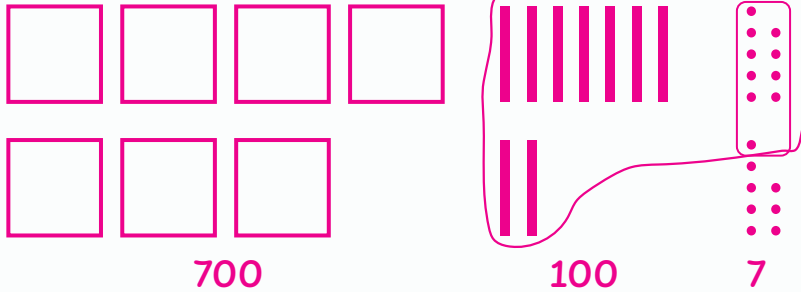


answer: 649

# Try This | Answer Key

## Lesson 6

1 Sample work shown.



answer: 807

## Lesson 7

1 Sample work shown.

$$\begin{aligned}400 + 200 &= 600 \\50 + 20 &= 70 \\6 + 5 &= 11 \\600 + 70 + 11 &= 681\end{aligned}$$

answer: 681

## Lesson 8

1 Sample work shown.

$$\begin{aligned}100 + 200 &= 300 \\0 + 90 &= 90 \\5 + 6 &= 11 \\300 + 90 + 11 &= 401\end{aligned}$$

answer: 401

## Lesson 9

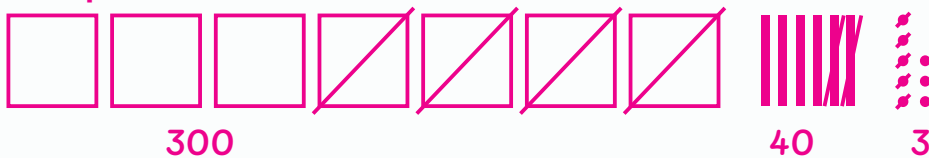
1 385, 375, 365, 355

2 818, 718, 618, 518

# Try This | Answer Key

## Lesson 10

1 Sample work shown.

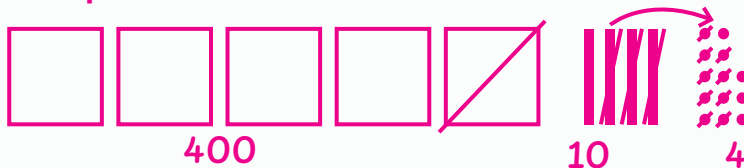


answer: 343

## Lesson 11

1 yes

2 Sample work shown.



answer: 414

## Lesson 12

1

$409 - 118$

$827 - 362$

$346 - 215$

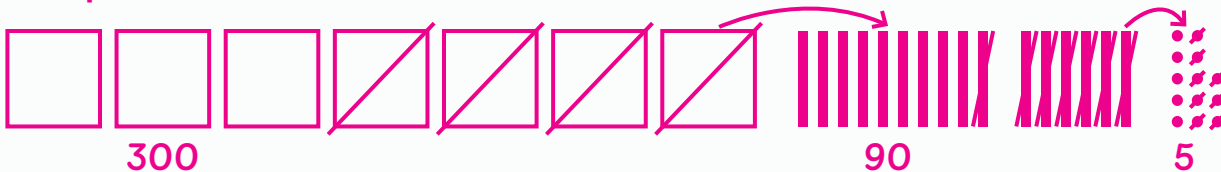
$781 - 674$

$316 - 204$

$539 - 473$

## Lesson 13

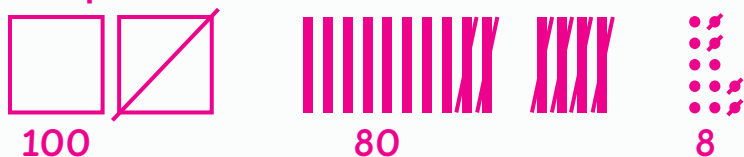
1 Sample work shown.



answer: 395

## Lesson 14

1 Sample work shown.



answer: 188

# Try This | Answer Key

## Lesson 15

1 Sample work shown.

$$\begin{aligned}612 &= 500 + 100 + 12 \\500 - 500 &= 0 \\100 - 30 &= 70 \\12 - 3 &= 9 \\0 + 70 + 9 &= 79\end{aligned}$$

answer: 79

## Lesson 16

1 Sample work shown.

$$\begin{array}{r}97 + 15 \\90 + 10 = 100 \\7 + 5 = 12 \\100 + 12 = 112\end{array}\qquad\qquad\begin{array}{r}96 + 34 \\6 + 4 = 10 \\90 + 10 + 30 = 130\end{array}$$

$$112 + 130 = 242$$

answer: 242

## Lesson 17

1 Sample work shown.

$$\begin{aligned}589 + 100 &= 689 \\689 + 5 &= 694\end{aligned}$$

answer: 694

## Lesson 18

1 Sample work shown.

$$\begin{aligned}593 + 7 &= 600 \\600 + 19 &= 619 \\7 + 19 &= 26\end{aligned}$$

answer: 26

## Lesson 19

1 Sample response shown.

estimate: about 200

I know that 200 and 200 is 400, so  $419 - 226$  would be close to 200.