


Lesson 9

# Subtracting with Regrouping

## Anchor Task

Pascal Elementary School	
number of boys	
number of girls	187
number of students	400

To solve this problem, what is a suitable number bond for 400?

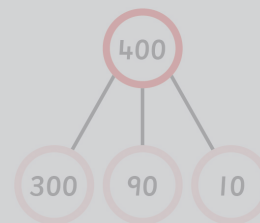
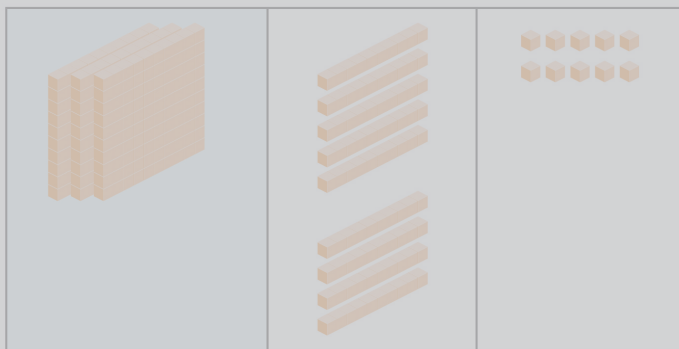


$400 - 187 =$    



## Let's Learn

1  's method



hundreds	tens	ones
<del>3</del>	<del>9</del>	<del>10</del>
-	1	8
2	1	3

### Learning Outcomes:

- To be able to subtract from a 3-digit multiple of 100 with regrouping of hundreds and tens

### Materials:

- base-ten blocks

### Preparation

Have students work in pairs. Make base-ten blocks available. Show students the Anchor Task.

### Exploration

“In today’s lesson, we are going to find out how many boys there are in Pascal Elementary School. Talk to one another about your ways to find out.”

### Discussion

#### Review the problem:

- How many students are there in the school?
- How many girls are there?
- How do we find the number of boys?
- How do we subtract?
- What is a suitable number bond for 400 to help us subtract?
- Is there another way to subtract?

#### Sharing and presenting:

Have the students share their suggestions.

#### Anticipated responses:

Most students would be able to use the standard column method to subtract. Some students may use base-ten blocks to work out the regrouping process. Some students may then represent the regrouping process in a number bond by splitting 400 into 300, 90, and 10. Some may split 400 into 200 and 200, then subtract 187 from 200 to get 13, and then add 200 and 13 to find the answer. Some may split 400 into 399 and 1 and use the standard column method to subtract without regrouping, then add 1 to the result to find the answer.

### Formalizing the discussion

- Formalize the discussion by drawing the bar model and writing the subtraction equation ( $400 - 187 = \square$ ) on the whiteboard. Represent the equation using the standard column as well.
- Ask:** Can we subtract 7 ones from 0 ones? How do we get more ones? (Students are expected to say that they can get more ones by regrouping the hundreds and then the tens.)
- Show how to regroup 1 hundred into 10 tens, and then 1 ten into 10 ones using base-ten blocks.
- Say:** 400 is made up of 3 hundreds, 9 tens, and 10 ones.
- Draw a number bond to split 400 into 300, 90, and 10.
- Ask:** Can we subtract 187 from 400 now?
- Work through the subtraction process using the standard column method.
- Get students to come up with other ways of subtracting 187 from 400 by asking:** Is there another way to subtract?
- Prompt them by asking:** My friend said that we can split 400 into 399 and 1 to subtract. How does this help?
- Go through the other suggestions shared by the students.

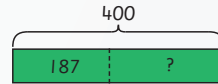


# Board Plan

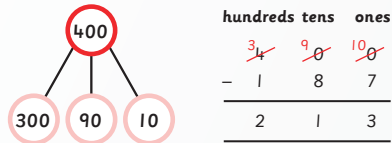
## Lesson 9 Subtracting with Regrouping

Date: \_\_\_\_\_

$$400 - 187 = 213$$

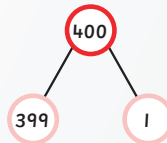


Method 1:



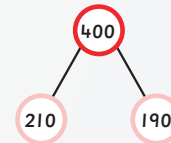
$400 - 187 = 213$   
There are 213 boys.

Method 2:



$399 - 187 = 212$   
 $400 - 187 = 213$

Method 3:



$190 - 187 = 3$   
 $210 + 3 = 213$

## Suggestion for Journal

Title: Subtracting with Regrouping

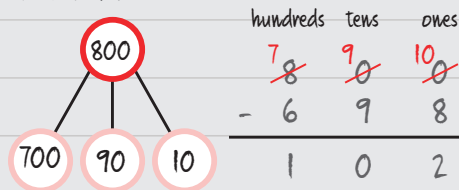
Date: \_\_\_\_\_

### Suggestion

**Say:** Solve  $800 - 698$  using number bonds. Show two ways of subtracting.

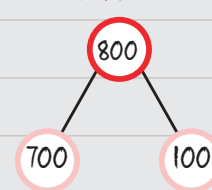
### Student's work:

Method 1:



$$800 - 698 = 102$$

Method 2:



$$700 - 698 = 2$$
  
$$100 + 2 = 102$$



# Differentiated Teaching

## Supporting Struggling Learners

- Provide students with base-ten blocks to help them visualize the process of regrouping the hundreds and tens. While doing so, point to the respective digits in the standard column to help students translate the physical manipulation to a more abstract representation.
- **Say:** 400 is made up of 4 hundreds. Show me 4 blocks of hundred.  
**Say:** Since there are no tens, we need to take 1 hundred from 4 hundreds and regroup it into 10 tens.  
**Say:** Since there are no ones, we need to take 1 ten from 10 tens and regroup it into 10 ones.  
**Ask:** How many hundreds, tens, and ones do we have now?  
**Say:** There are 3 hundreds, 9 tens, and 10 ones now.
- Lead students to split 400 into 300, 90, and 10 using a number bond.
- Get them to explore other suitable number bonds for 400 to help them subtract on their own.

## Challenging Advanced Learners

### Suggestion 1:

**Challenge their thinking by asking:** My friend wrote '400 - 187 = 413 - 200' to solve this problem. How does this method work?

### Suggestion 2:


Have them explain how the following method works.

hundreds	tens	ones
4	<del>0</del> <sup>10</sup>	<del>0</del> <sup>10</sup>
- <del>1</del>	- <del>8</del>	7
<u>2</u>	<u>9</u>	<u>7</u>
2	1	3

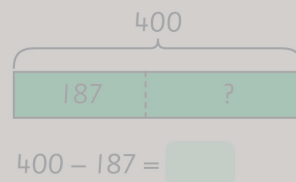
# Subtracting with Regrouping

## Lesson 9

### Anchor Task

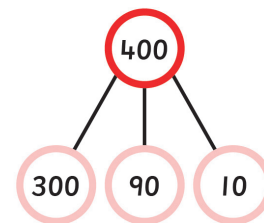
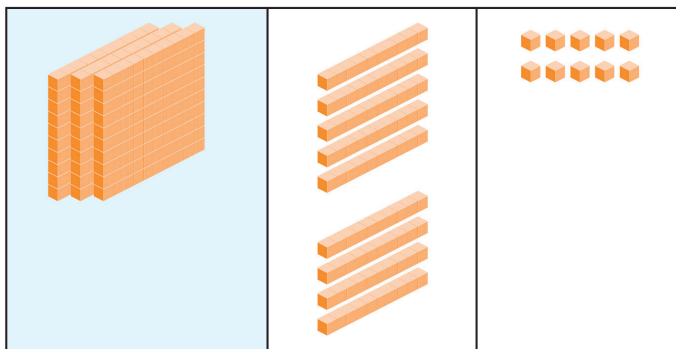
Pascal Elementary School	
number of boys	
number of girls	187
number of students	400

To solve this problem, what is a suitable number bond for 400?



### Let's Learn

1  's method



hundreds	tens	ones
<del>3</del> 4	<del>9</del> 0	<del>10</del> 0
- 1	8	7
<b>2</b>	<b>1</b>	<b>3</b>



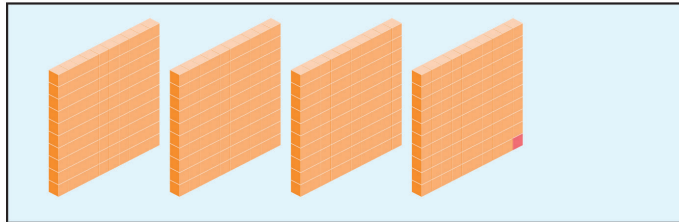
## Let's Learn

- Compare the methods the students share with the ones in the book.
- **Prompt their thinking by asking:**
  - What do you notice about Mateo's method?
  - He used 3 blocks of hundred, 9 blocks of 10, and 10 cubes to make 400. Is that correct?
  - He also used a number bond to split 400 into 300, 90, and 10. Did you see that?
  - Then, he subtracted 187 from 400 using the standard column. Did we?
  - Why did he replace '0' with '10' in the ones column?
  - Why did he replace '0' with '9' in the tens column?
  - Why did he replace '4' with '3' in the hundreds column?
  - What is the answer? Did we get the same answer?
- **Ask:** Are there other ways to solve this problem?

2

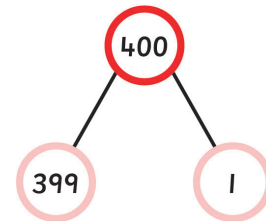


's method



$$399 - 187 = 212$$

$$\text{So, } 400 - 187 = 213$$

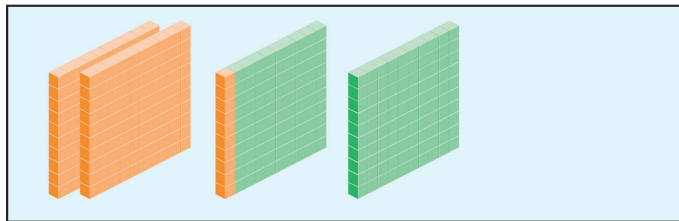


hundreds	tens	ones
3	9	9
- 1	8	7
2	1	2

3

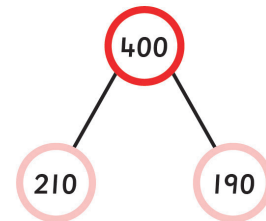


's method



$$190 - 187 = 3$$

$$\text{So, } 400 - 187 = 3 + 210$$



### Guided Practice

Subtract.

(a)  $100 - 87 = 13$

(c)  $500 - 273 = 227$

(b)  $500 - 39 = 461$

(d)  $900 - 399 = 501$

What is a suitable number bond for 100, 500, and 900?



Can you figure out  $3,500 - 1,273$ ?

$2,227$



Complete Worksheet 9 • Pages 48 to 50



## Let's Learn

- **Continue with Let's Learn 2 and ask:**
  - What do you notice about Penny's method?
  - How is it different from Mateo's method?
  - Penny showed that 400 is made up of 399 and 1 using base-ten blocks and a number bond. Did you see that?
  - She subtracted 187 from 399 first. Why did she do that?  
(Lead students to see that it is easier to subtract 187 from 399 as no regrouping is involved.)
  - How did she find the answer to  $400 - 187$ ?  
(Students should be able to tell that since 400 is 1 more than 399,  $400 - 187$  is 1 more than  $399 - 187$  and hence  $1 + 212 = 213$ .)
- **Move on to Let's Learn 3 by asking:**
  - What do you notice about Robert's method?
  - How is it different from the other two methods?
  - Robert showed that 400 is made up of 210 and 190 using base-ten blocks and a number bond. Did you see that?
  - Why did he split 400 this way?  
(Students should be able to tell that it is easy to subtract 187 from 190.)
  - How did he find the answer to  $400 - 187$  using  $190 - 187 = 3$ ?  
(Students are expected to say that he added 3 and 210 to find the answer.)
- **Conclude by reading the equation in context:**
  - $400 - 187 = 213$
  - There are 400 students. 187 of them are girls. 213 of them are boys.
- **Get students to evaluate the three methods by asking:** Which method do you prefer? Why?

### Note for teachers:

Comparing methods allow students to understand that there are many ways to decompose a number, thus enabling students to manipulate numbers more flexibly and creatively in calculations.

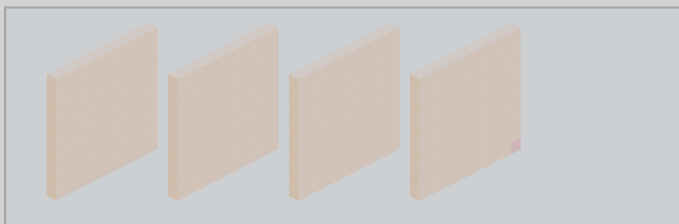
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2

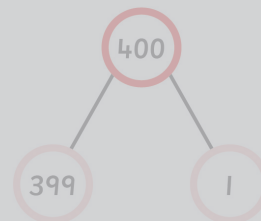


's method



$$399 - 187 = 212$$

$$\text{So, } 400 - 187 = 213$$



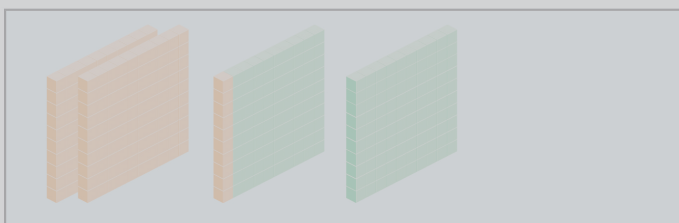
hundreds	tens	ones
3	9	9
- 1	8	7
2	1	2

3	9	9
- 1	8	7
2	1	2

3

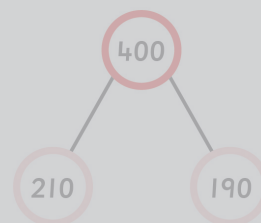


's method



$$190 - 187 = 3$$

$$\text{So, } 400 - 187 = 3 + 210$$

**Guided Practice**

Subtract.

(a)  $100 - 87 = 13$

(c)  $500 - 273 = 227$

(b)  $500 - 39 = 461$

(d)  $900 - 399 = 501$

What is a suitable number bond for 100, 500, and 900?



Can you figure out  $3,500 - 1,273$ ?

**2,227**



Complete Worksheet 9 • Pages 48 to 50



## Guided Practice

- Students are required to subtract a 2-digit or 3-digit number from a 3-digit multiple of 100 in this practice.
- Encourage students to use two different ways to split 100, 500, and 900 using number bonds to help them subtract. Have them explain their number bonds.
- **Extend their learning by asking:** Can you figure out  $3,500 - 1,273$ ? Which equation can help us figure it out?  
(Lead students to see that they can make use of the answer in (c) to help them figure out  $3,500 - 1,273$ .)



## Differentiated Teaching

### Supporting Struggling Learners

Continue to support students with base-ten blocks before gradually moving to the number bond representation. The aim is for students to understand that there can be more than one possible way of solving a problem.

For example, in (c), guide students to see that they can split 500 into 400, 90, and 10 or split 500 into 300 and 200 before subtracting.

### Challenging Advanced Learners

Get students to explain how they can use mental strategies to solve each question.

(E.g.  $900 - 399$  can be solved by calculating  $900 - 400$  first and then adjusting the answer by adding 1.)

### Assessment Checklist

Performance	Question(s)	Action
Can the student subtract from a 3-digit multiple of 100 using the standard column method?	1	Remind students to start by subtracting the ones, followed by the tens, and then the hundreds. Encourage them to verbalize the regrouping process so as to make sense of every step and ensure that every step is taken with conscious effort.
Can the student subtract from a 3-digit multiple of 100 independently?	2	<p>Get students to use suitable number bonds to solve. Students should be able to see that they can use one subtraction equation to solve the subsequent one.</p> <p>For example, in (a), students can use the answer to <math>200 - 88</math> to help them solve <math>200 - 188</math>.</p> <p>Get students to try the rest of the question on their own.</p>
Can the student subtract and match the answers correctly?	3	<p>Students should be able to subtract the numbers on the left and match them to the numbers on the right. Encourage them to use different methods to subtract.</p> <p>Tell students to write the answers next to the subtraction equations before looking for a match on the right side.</p>

Name: \_\_\_\_\_ Date: \_\_\_\_\_

### Worksheet 9

#### Subtracting with Regrouping

I Subtract.

(a)

	hundreds	tens	ones
	<del>0</del>	<del>9</del>	<del>10</del>
-		3	2
		6	8

(b)

	hundreds	tens	ones
	<del>1</del>	<del>9</del>	<del>10</del>
-		9	5
	1	0	5

(c)

	hundreds	tens	ones
	<del>4</del>	<del>9</del>	<del>10</del>
-	1	5	6
	3	4	4

(d)

	hundreds	tens	ones
	<del>5</del>	<del>9</del>	<del>10</del>
-	5	4	1
		5	9

(e)

	hundreds	tens	ones
	<del>6</del>	<del>9</del>	<del>10</del>
-	2	9	9
	4	0	1

(f)

	hundreds	tens	ones
	<del>8</del>	<del>9</del>	<del>10</del>
-	7	6	8
	1	3	2

2 Subtract.

$$(a) \quad 200 - 88 = \boxed{112}$$

$$(b) \quad 300 - 64 = \boxed{236}$$

$$200 - 188 = \boxed{12}$$

$$300 - 264 = \boxed{36}$$

$$400 - 88 = \boxed{312}$$

$$500 - 64 = \boxed{436}$$

$$400 - 188 = \boxed{212}$$

$$500 - 364 = \boxed{136}$$

$$(c) \quad 600 - 75 = \boxed{525}$$

$$(d) \quad 900 - 101 = \boxed{799}$$

$$600 - 175 = \boxed{425}$$

$$900 - 202 = \boxed{698}$$

$$600 - 375 = \boxed{225}$$

$$900 - 808 = \boxed{92}$$

$$600 - 575 = \boxed{25}$$


$$900 - 880 = \boxed{20}$$

3 Match.

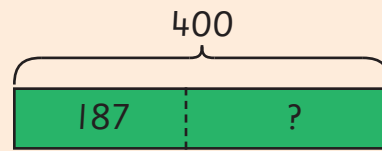
$900 - 307$	•		•	720
$800 - 80$	•		•	224
$500 - 63$	•		•	593
$300 - 76$	•		•	437
$700 - 450$	•		•	184
$200 - 16$	•		•	250
$100 - 42$	•		•	144
$400 - 268$	•		•	58
$500 - 98$	•		•	132
$600 - 456$	•		•	112
$900 - 788$	•		•	402

## Subtracting with Regrouping

### Anchor Task

Pascal Elementary School	
number of boys	
number of girls	187
number of students	400

To solve this problem, what is a suitable number bond for 400?



$$400 - 187 = \square$$

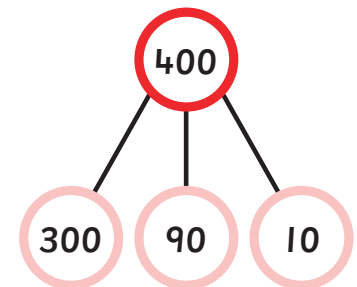
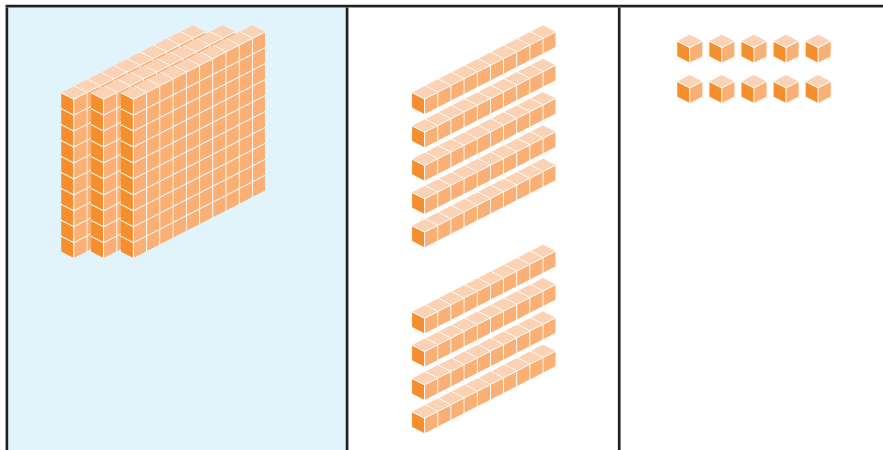


### Let's Learn

1



's method

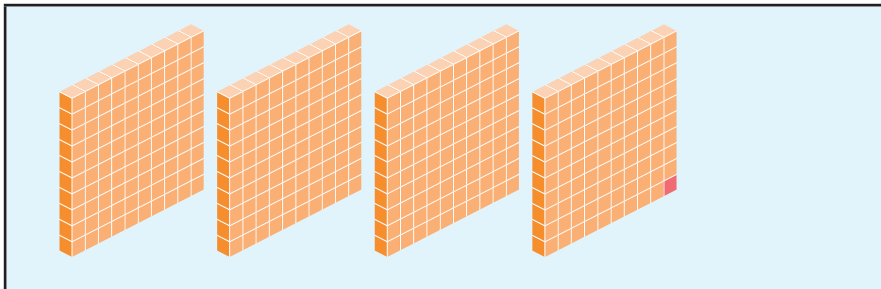


	hundreds	tens	ones
	<del>3</del> 4	<del>9</del> 0	<del>1</del> 0
-	1	8	7
	<span style="background-color: #c8e6c9; border: 1px solid #ccc; padding: 2px;"> </span>	<span style="background-color: #c8e6c9; border: 1px solid #ccc; padding: 2px;"> </span>	<span style="background-color: #c8e6c9; border: 1px solid #ccc; padding: 2px;"> </span>

2

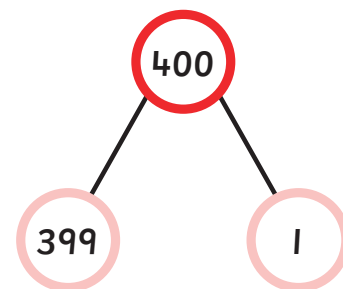


's method



$$399 - 187 = \square$$

$$\text{So, } 400 - 187 = \square$$



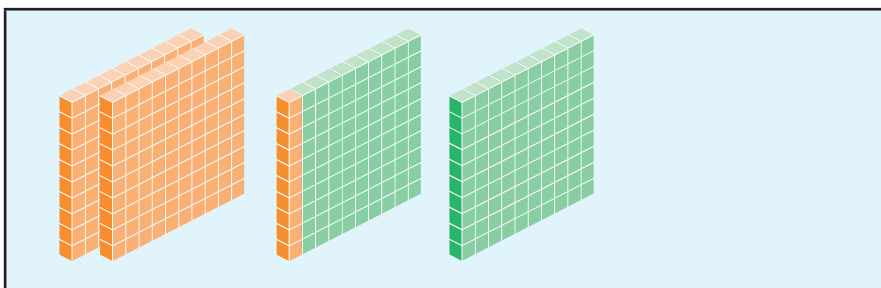
hundreds	tens	ones
3	9	9
- 1	8	7
$\square$	$\square$	$\square$



3

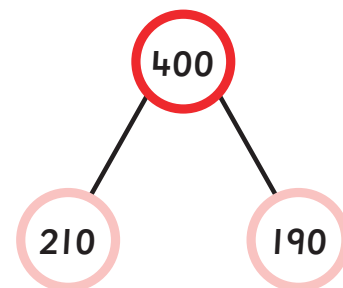


's method



$$190 - 187 = 3$$

$$\text{So, } 400 - 187 = 3 + \square$$



## Guided Practice

Subtract.

(a)  $100 - 87 = \square$

(b)  $500 - 39 = \square$

(c)  $500 - 273 = \square$

(d)  $900 - 399 = \square$

What is a suitable number bond for 100, 500, and 900?



Can you figure out  $3,500 - 1,273$ ?





Name: \_\_\_\_\_

Date: \_\_\_\_\_

## Worksheet 9

### Subtracting with Regrouping

I Subtract.

(a)

	hundreds	tens	ones
	1	0	0
-		3	2
<hr/>			
<hr/>			

(b)

	hundreds	tens	ones
	2	0	0
-		9	5
<hr/>			
<hr/>			

(c)

	hundreds	tens	ones
	5	0	0
-	1	5	6
<hr/>			
<hr/>			

(d)

	hundreds	tens	ones
	6	0	0
-	5	4	1
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<hr/>			

(e)

	hundreds	tens	ones
	7	0	0
-	2	9	9
<hr/>			
<hr/>			

(f)

	hundreds	tens	ones
	9	0	0
-	7	6	8
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<hr/>			

**2** Subtract.

(a)  $200 - 88 =$

(b)  $300 - 64 =$

$200 - 188 =$

$300 - 264 =$

$400 - 88 =$

$500 - 64 =$

$400 - 188 =$

$500 - 364 =$

(c)  $600 - 75 =$

(d)  $900 - 101 =$

$600 - 175 =$

$900 - 202 =$

$600 - 375 =$

$900 - 808 =$

$600 - 575 =$

$900 - 880 =$

**3** Match.

$900 - 307$

$800 - 80$

$500 - 63$

$300 - 76$

$700 - 450$

$200 - 16$

$100 - 42$

$400 - 268$

$500 - 98$

$600 - 456$

$900 - 788$

720

224

593

437

184

250

144

58

132

112

402