

# Unit 4: Home Practice

## Part 1 Triangle Flash Cards: Nines

Study for the quiz on the multiplication and division facts for the nines. Take home your *Triangle Flash Cards: 9s* and your list of facts you need to study. Ask a family member to choose one flash card at a time. To quiz you on a multiplication fact, he or she should cover the corner containing the highest number. (The highest number on each card is lightly shaded.) This number will be the answer to the multiplication fact. Multiply the two uncovered numbers.

To quiz you on a division fact, your family member can cover one of the unshaded numbers. Then use the two uncovered numbers to solve the division fact.

Ask your family member to mix up the multiplication and division facts. He or she should sometimes cover the highest number and sometimes cover one of the smaller numbers.

Your teacher will tell you when the quiz on the nines will be.

## Part 2 Caterpillar to Chrysalis

A class observed 6 caterpillars and kept track of how many days it took for each caterpillar to turn into a chrysalis. A chrysalis is the hard-shelled stage that comes before the caterpillar turns into a butterfly.

Days to chrysalis: 10, 8, 8, 8, 10, 10

1. What is the median number of days it took for the caterpillars to change into chrysalises?

The class then kept track of how many days it took for each chrysalis to turn into a butterfly.

Days to butterfly: 15, 15, 17, 15, 17, 14

2. What is the median number of days it took for the chrysalises to turn into butterflies?

### Part 3 Problem Solve with Data

A class made paper airplanes and kept track of how far the paper airplanes flew. Each student performed three trials and recorded the distance in centimeters.

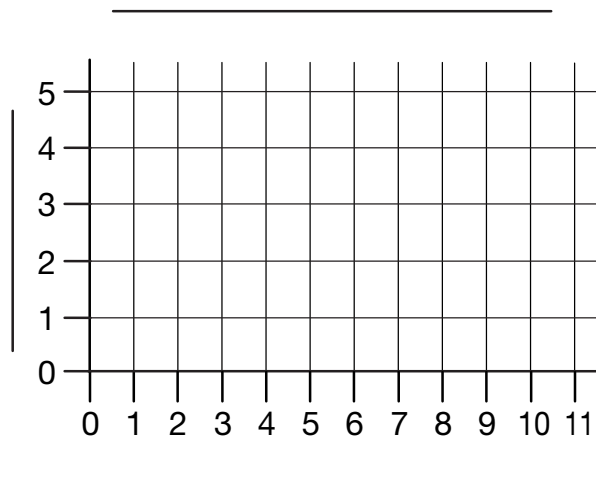
- Write the median distance that each student’s airplane flew.

**Flight Distance for Paper Airplanes**

Student	Trial 1	Trial 2	Trial 3	Median Distance
Irma	13 cm	11 cm	8 cm	
Jacob	11 cm	9 cm	11 cm	
Grace	10 cm	8 cm	9 cm	
Ming	4 cm	3 cm	5 cm	
Romesh	3 cm	5 cm	2 cm	
John	5 cm	4 cm	2 cm	
Keenya	9 cm	8 cm	9 cm	
Kit	5 cm	7 cm	10 cm	

- Make a bar graph of the median distances in trial flights. Remember to label each axis.

Median Distance	Tallies	Number
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		



- Make a paper airplane and fly it three times. Measure the distance the airplane flies each time. What is the median distance in centimeters that your airplane flew? How does your median compare to the class’s data?

**Part 4** Addition and Subtraction Practice

Use paper and pencil or mental math to solve these problems. Choose an efficient method based on the numbers in the problem. Remember to do a quick estimate and look at your answer to be sure it makes sense. Use the *Addition Strategies Menu* and *Subtraction Strategies Menu* in the *Student Guide Reference* section.

1. A. 
$$\begin{array}{r} 203 \\ + 597 \\ \hline \end{array}$$

B. 
$$\begin{array}{r} 640 \\ - 235 \\ \hline \end{array}$$

C. 
$$\begin{array}{r} 3210 \\ + 2345 \\ \hline \end{array}$$

D. 
$$\begin{array}{r} 6753 \\ + 1985 \\ \hline \end{array}$$

E. 
$$\begin{array}{r} 7625 \\ - 4434 \\ \hline \end{array}$$

F. 
$$\begin{array}{r} 614 \\ 992 \\ + 43 \\ \hline \end{array}$$

2. Explain how you can solve Question 1A using mental math.
3. Show a second method for solving Question 1D.
4. Explain your estimation strategy for Question 1F.

**Part 5** Multiplication Strategies

Solve. Estimate to make sure your answers are reasonable. Use the *Multidigit Multiplication Strategies Menu* in the *Student Guide Reference* section.

1. **A.**  $32 \times 6 =$       **B.**  $725 \times 3 =$       **C.**  $682 \times 4 =$       **D.**  $199 \times 6 =$

**E.**  $25 \times 32 =$       **F.**  $42 \times 36 =$       **G.**  $19 \times 56 =$       **H.**  $72 \times 31 =$

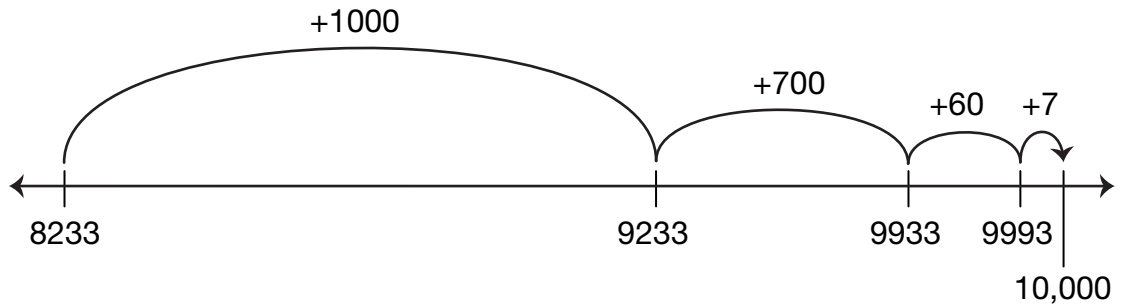
**I.**  $83 \times 41 =$       **J.**  $92 \times 65 =$       **K.**  $33 \times 69 =$       **L.**  $75 \times 25 =$

- Choose one of the problems above and show how you solve it using the expanded-form method.
- Choose one of the problems above and show how you solve it using the all-partials method.
- Choose one of the problems above and show how you found a reasonable estimate.

**Part 6** Number Line Problems

Use the number line to answer the questions.

1.



A. Write a number sentence to show how the hopper moved.

B. Show another way the hopper can move from 8233 to get to 10,000. Write a number sentence to match.

2. For the starting numbers below, show how a base-ten hopper can move to get to 10,000. Write a number sentence for each.

A. 8230

B. 6056

C. 3897

## Part 7 Connect Multiplication Strategies

Finish each problem using the strategy that was started. Use the *Multidigit Multiplication Strategies Menu* in the *Student Guide Reference* section.

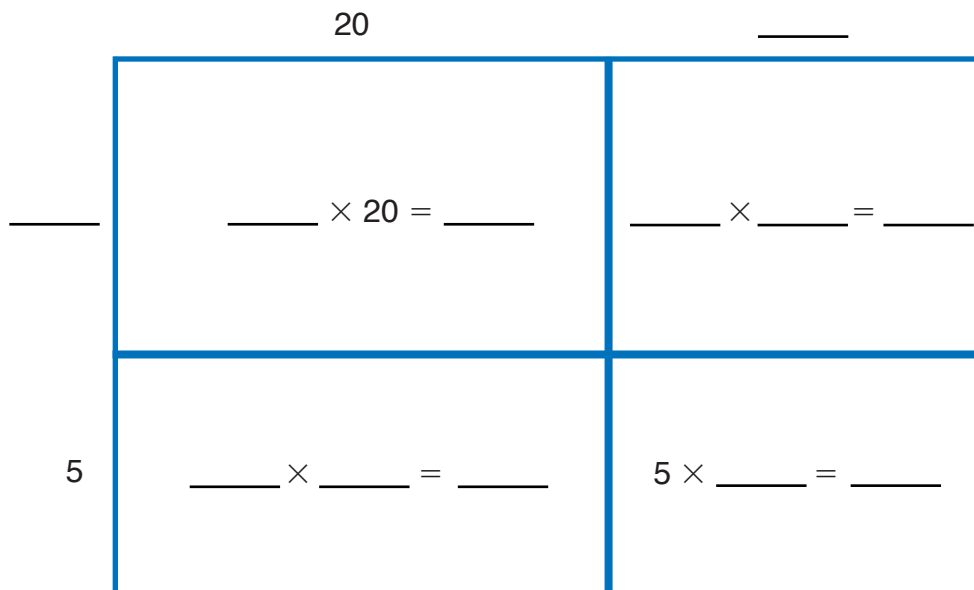
1. Grace and Maya needed to solve  $45 \times 28$ .

A. Grace started the problem this way. Finish it using her method.

$$\begin{array}{r} 28 \\ \times 45 \\ \hline 800 \\ 320 \end{array}$$

B. Show where Grace got 800 and 320.

2. A. Maya used rectangles to solve the same problem. She started this way. Fill in the blanks and complete the problem.

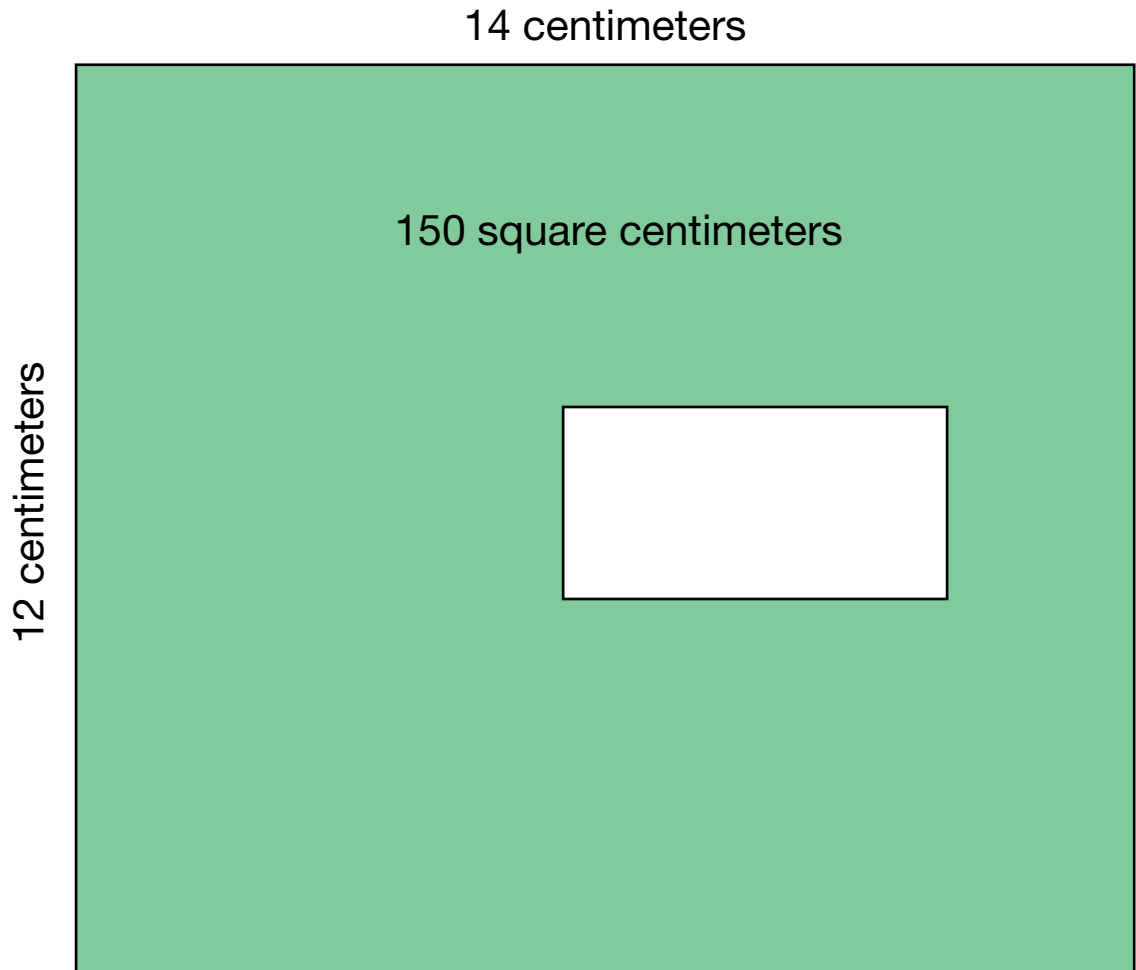


$45 \times 28 =$

B. Compare Grace's and Maya's methods. How are they alike? How are they different?

**Part 8 Find The Area**

The area of the shaded part is 150 square centimeters. The length of the hole is twice as long as the width of the hole.



- A. Find the area of the large rectangle.
- B. Find the area of the hole.
- C. Find the length and width of the hole.
- D. Show or tell how you found the answer to Question C.

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## Unit 4: Home Practice

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Your teacher will tell you when the quiz on the nines will be.

### Part 2 Caterpillar to Chrysalis

A class observed 6 caterpillars and kept track of how many days it took for each caterpillar to turn into a chrysalis. A chrysalis is the hard-shelled stage that comes before the caterpillar turns into a butterfly.

Days to chrysalis: 10, 8, 8, 8, 10, 10

1. What is the median number of days it took for the caterpillars to change into chrysalises?

The class then kept track of how many days it took for each chrysalis to turn into a butterfly.

Days to butterfly: 15, 15, 17, 15, 17, 14

2. What is the median number of days it took for the chrysalises to turn into butterflies?

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### Part 3 Problem Solve with Data

A class made paper airplanes and kept track of how far the paper airplanes flew. Each student performed three trials and recorded the distance in centimeters.

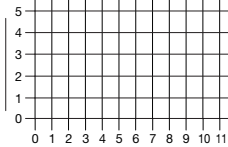
1. Write the median distance that each student's airplane flew.

Flight Distance for Paper Airplanes

Student	Trial 1	Trial 2	Trial 3	Median Distance
Irma	13 cm	11 cm	8 cm	
Jacob	11 cm	9 cm	11 cm	
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Ming	4 cm	3 cm	5 cm	
Romesh	3 cm	5 cm	2 cm	
John	5 cm	4 cm	2 cm	
Keenya	9 cm	8 cm	9 cm	
Kit	5 cm	7 cm	10 cm	

2. Make a bar graph of the median distances in trial flights. Remember to label each axis.

Median Distance	Tallies	Number
3	/	1
4	//	2
5		
6		
7	/	1
8	//	2
9	//	2
10		
11		
12		
13		
14		



3. Make a paper airplane and fly it three times. Measure the distance the airplane flies each time. What is the median distance in centimeters that your airplane flew? How does your median compare to the class's data?

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## Home Practice

### Part 2. Caterpillar to Chrysalis (TG p. 1) Questions 1–2

1. 9 days
2. 15 days

### Part 3. Problem Solve with Data (TG p. 2) Questions 1–3

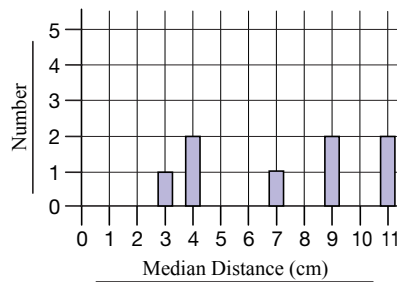
1. 

Student	Trial 1	Trial 2	Trial 3	Median Distance
Irma	13 cm	11 cm	8 cm	11 cm
Jacob	11 cm	9 cm	11 cm	11 cm
Grace	10 cm	8 cm	9 cm	9 cm
Ming	4 cm	3 cm	5 cm	4 cm
Romesh	3 cm	5 cm	2 cm	3 cm
John	5 cm	4 cm	2 cm	4 cm
Keenya	9 cm	8 cm	9 cm	9 cm
Kit	5 cm	7 cm	10 cm	7 cm

- 2.

Median Distance	Tallies	Number
3	/	1
4	//	2
5		
6		
7	/	1
8		
9	//	2
10		
11	//	2
12		
13		
14		

Median Distance in Trial Flights



3. Responses will vary.



**Part 4. Addition and Subtraction Practice**

(TG p. 3)

**Questions 1–4**

1. A. 800      B. 405      C. 5555  
D. 8738      E. 3191      F. 1649
2. Possible response: I subtracted 3 from 203 and added it to 597.  
 $200 + 600 = 800$
3. Possible response: I could use the all-partials method.  

$$\begin{array}{r} 6753 \\ + 1985 \\ \hline 7000 \\ 1600 \\ 130 \\ + \quad 8 \\ \hline 8738 \end{array}$$
4. Possible response: I rounded 614 to 600, 992 to 1000, and 43 to 40.  
 $600 + 100 + 40 = 1640$ .  
1649 is a reasonable answer.

**Part 5. Multiplication Strategies (TG p. 4)**

**Questions 1–4**

1. A. 192      B. 2175      C. 2728      D. 1194  
E. 800      F. 1512      G. 1064      H. 2232  
I. 3403      J. 5980      K. 2277      L. 1875
2. Responses will vary. Possible response for Question 1F:  

	40	2
30	1200	60
6	240	12

$$1200 + 240 + 60 + 12 = 1512$$
3. Responses will vary. Possible response for Question 1B:  

$$\begin{array}{r} 725 = 700 + 20 + 5 \\ \times 3 \quad \quad \quad \times 3 \\ \hline 2100 + 60 + 15 = 2175 \end{array}$$
4. Responses will vary. Possible response for Question 1D:  
199 is about 200.  $200 \times 6 = 1200$ .  
1200 is a reasonable estimate.

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**Part 4 Addition and Subtraction Practice**  
Use paper and pencil or mental math to solve these problems. Choose an efficient method based on the numbers in the problem. Remember to do a quick estimate and look at your answer to be sure it makes sense. Use the *Addition Strategies Menu* and *Subtraction Strategies Menu* in the *Student Guide Reference* section.

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D.  $\begin{array}{r} 6753 \\ + 1985 \\ \hline \end{array}$       E.  $\begin{array}{r} 7625 \\ - 4434 \\ \hline \end{array}$       F.  $\begin{array}{r} 614 \\ 992 \\ + 43 \\ \hline \end{array}$

2. Explain how you can solve Question 1A using mental math.

3. Show a second method for solving Question 1D.

4. Explain your estimation strategy for Question 1F.

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**Part 5 Multiplication Strategies**  
Solve. Estimate to make sure your answers are reasonable. Use the *Multidigit Multiplication Strategies Menu* in the *Student Guide Reference* section.

1. A.  $32 \times 6 =$       B.  $725 \times 3 =$       C.  $682 \times 4 =$       D.  $199 \times 6 =$

E.  $25 \times 32 =$       F.  $42 \times 36 =$       G.  $19 \times 56 =$       H.  $72 \times 31 =$

I.  $83 \times 41 =$       J.  $92 \times 65 =$       K.  $33 \times 69 =$       L.  $75 \times 25 =$

2. Choose one of the problems above and show how you solve it using the expanded-form method.

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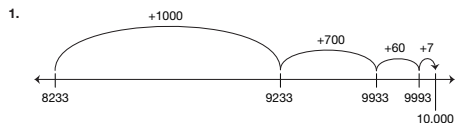
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**Part 6** Number Line Problems

Use the number line to answer the questions.



A. Write a number sentence to show how the hopper moved.

B. Show another way the hopper can move from 8233 to get to 10,000. Write a number sentence to match.

2. For the starting numbers below, show how a base-ten hopper can move to get to 10,000. Write a number sentence for each.

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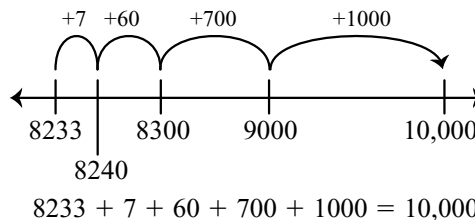
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**Part 6. Number Line Problems (TG p. 5)**

**Questions 1–2**

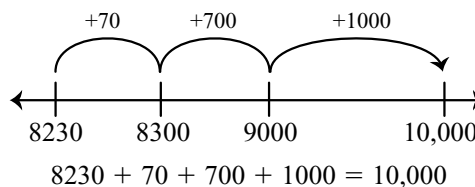
1. A.  $8233 + 1000 + 700 + 60 + 7 = 10,000$

B. Responses will vary.

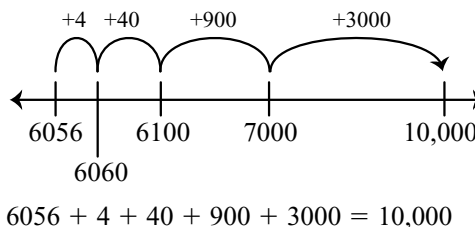


2. Responses will vary. One possible response is shown for each.

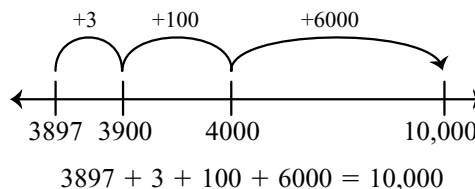
A.



B.



C.



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**Part 7. Connect Multiplication Strategies**

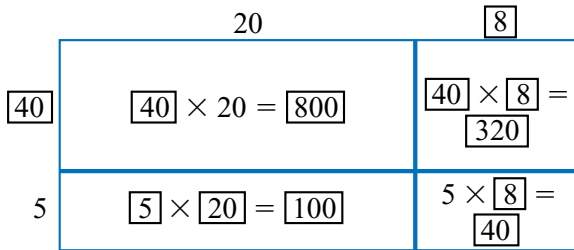
(TG p. 6)

**Questions 1–2**

1. A. 
$$\begin{array}{r} 28 \\ \times 45 \\ \hline 800 \\ 320 \\ 100 \\ \hline 40 \\ \hline 1260 \end{array}$$

B.  $40 \times 20 = 800$   
 $40 \times 8 = 320$

2. A.



$45 \times 28 = 800 + 100 + 320 + 40 = 1260$

B. Answer will vary. Both methods use partial products. Maya’s method uses rectangles as a tool.

**Part 8. Find The Area (TG p. 7)**

**Questions A–D**

- A. 168 square centimeters
- B. 18 square centimeters
- C. length 6 centimeters; width 3 centimeters
- D. Possible response: To find the area of the large rectangle I multiplied  $14 \text{ cm} \times 12 \text{ cm} = 168 \text{ sq cm}$ . Since the shaded part has an area of  $150 \text{ sq cm}$ , I subtracted  $168 - 150 = 18 \text{ sq cm}$  to find the area of the hole. I thought of what two numbers I multiply to equal 18. I could multiply  $1 \times 18$ ,  $9 \times 2$ , or  $3 \times 6$ . Since the length is twice as long as the width, the length has to be 6 centimeters and the width 3 centimeters.

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**Part 7 Connect Multiplication Strategies**  
 Finish each problem using the strategy that was started. Use the *Multidigit Multiplication Strategies Menu* in the *Student Guide Reference* section.

1. Grace and Maya needed to solve  $45 \times 28$ .

A. Grace started the problem this way. Finish it using her method.

$$\begin{array}{r} 28 \\ \times 45 \\ \hline 800 \\ 320 \end{array}$$

B. Show where Grace got 800 and 320.

2. A. Maya used rectangles to solve the same problem. She started this way. Fill in the blanks and complete the problem.

45 × 28 = \_\_\_\_\_

B. Compare Grace’s and Maya’s methods. How are they alike? How are they different?

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**Part 8 Find The Area**  
 The area of the shaded part is 150 square centimeters. The length of the hole is twice as long as the width of the hole.

A. Find the area of the large rectangle.

B. Find the area of the hole.

C. Find the length and width of the hole.

D. Show or tell how you found the answer to Question C.

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