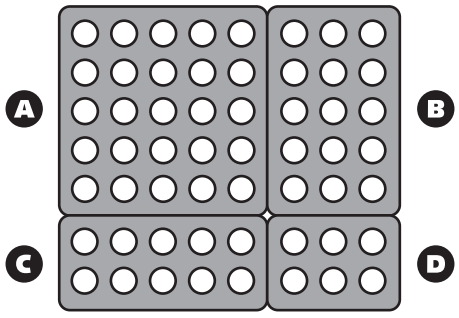
Name _____ Date _____

Extension
Lesson 1

Recognizing Rectangular Arrays

1. Fill in the total number of dots for each box or group of boxes.

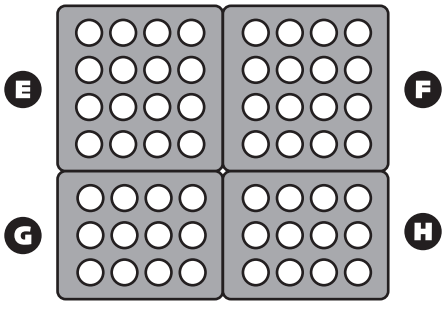


A B C D

A+B C+D (A+B)+(C+D)

A+C B+D (A+C)+(B+D)

2. Fill in the total number of dots for each box and find the total.



E F G H total

___ + ___ + ___ + ___ = ___

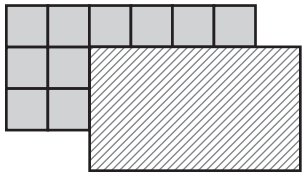
Name _____ Date _____

Extension
Lesson 2

Arrays of Square Tiles

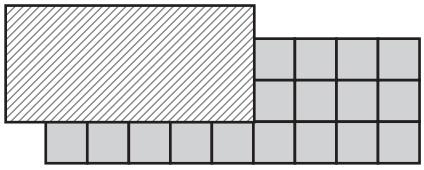
These rectangular arrays of square tiles are partly covered by a striped card. How many tiles can you see? How many tiles are covered?

1



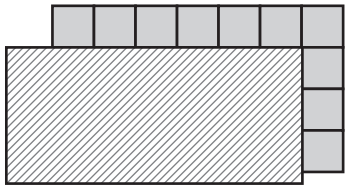
Can see	
Covered	
Total	

2



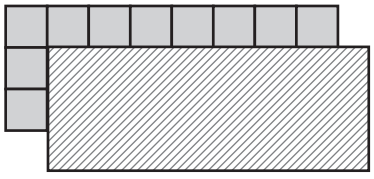
Can see	
Covered	
Total	

3



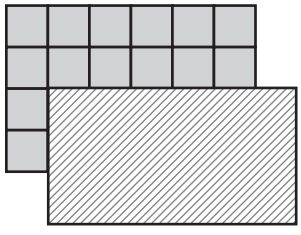
Can see	
Covered	
Total	

4



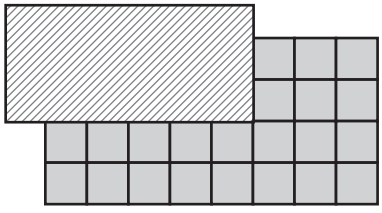
Can see	
Covered	
Total	

5



Can see	
Covered	
Total	

6



Can see	
Covered	
Total	

Name _____ Date _____

Extension
Lesson 3

Intersecting Lines

Look back at LAB pages 25 and 26.

1. There were _____ different maps with **1** street.
2. There were _____ different maps with **2** streets.
3. There were _____ different maps with **3** streets.
4. There were _____ different maps with **4** streets.
5. There were _____ different maps with **5** streets.

---

6. Predict how many different maps can be made with **8** streets. _____
7. Using as many spaces as you need below, draw all the 8-street maps, and label each map with its number of intersections.

Number of Intersections _____	Number of Intersections _____	Number of Intersections _____
Number of Intersections _____	Number of Intersections _____	Number of Intersections _____
Number of Intersections _____	Number of Intersections _____	Number of Intersections _____

Name _____ Date _____

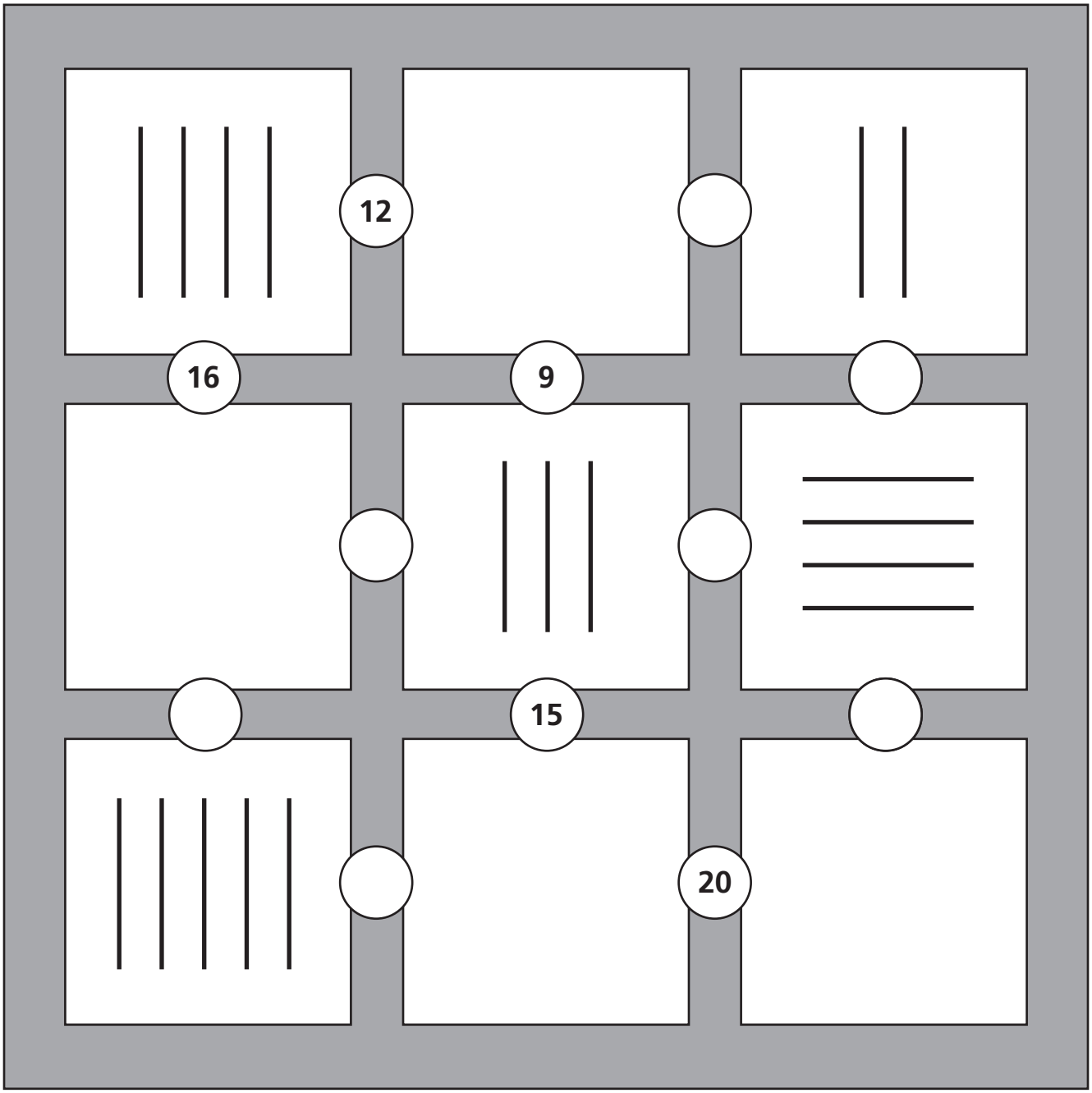
Extension
Lesson 4

Visualizing Intersections

Each circle touches two sets of lines.

In each blank circle, write the number of intersections you would see if the two sets of lines were both part of the same map.

Also draw any missing sets of lines.



Name _____ Date _____

Extension
Lesson 5

Finding the Number of Intersections

1. Draw a map of a town that has **7** streets and **12** intersections.

2. Draw a map of a town that has **13** streets and **12** intersections.

3. Draw a map of a town that has **8** streets and **12** intersections.

4. Draw a map of a town that has **8** streets and more than **15** intersections.

5. Draw a map of a town that has **9** streets and more than **14** intersections.

6. Draw a map of a town that has **10** streets and fewer than **16** intersections.

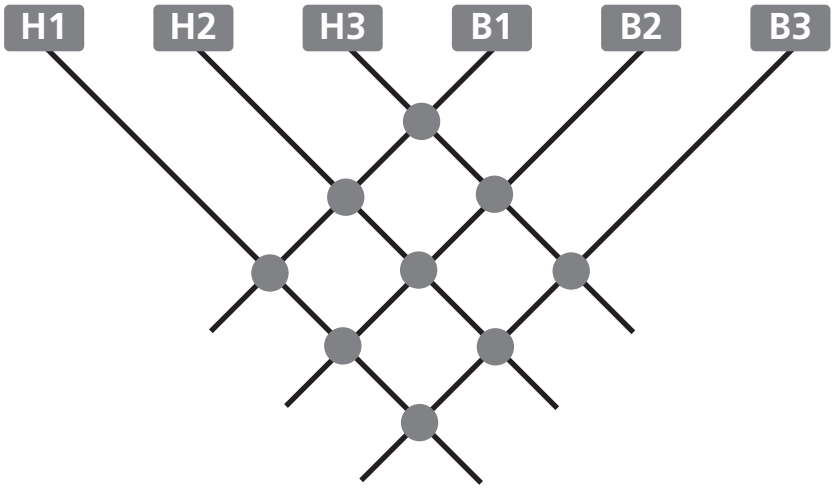
Name _____ Date _____

Extension
Lesson 6

Pairing Objects

How many handshakes would there be?

1. A group of three hikers met a group of three bicyclists.



How many people were there? _____

If each hiker shook hands with each bicyclist, how many handshakes would there be? _____

---

2. Now imagine that 2 hikers met 4 bicyclists.

How many people were there? _____

Draw a diagram to show all of the handshakes if each hiker shook hands with each bicyclist.

How many handshakes were there? _____

---

3. What other number of handshakes could occur for 6 total hikers and bicyclists? _____

Name _____ Date _____

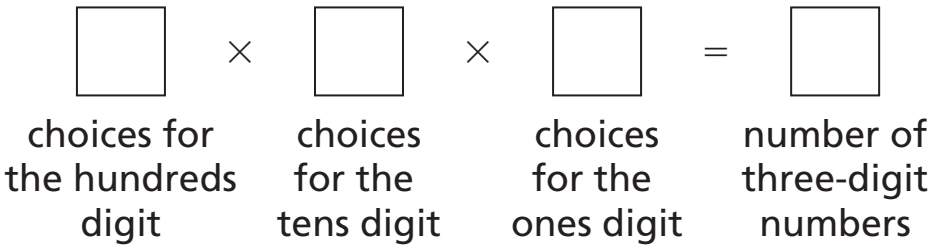
Extension
Lesson 7

Listing Combinations

List all of the three-digit numbers that have:

- a hundreds digit from this list: **1, 2, 3**
- a tens digit from this list: **4, 5**
- a ones digit from this list: **6, 7, 8, 9**

_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____



Name _____ Date _____

Extension
Lesson 8

Using Multiplication

1. The map of a tiny town shows 8 streets and 12 intersections. Draw the map.

2. Mia arranged her baseball cards into 5 equal rows. She had 30 cards. How many columns did she make?

3. Tony had 8 nickels. How much money did he have?

4. The T-Shirt Store has 4 colors of shirts. Each can be ordered in small, medium, or large. How many one color–one size combinations are there?

5. Ryan takes 6 steps forward and 1 step back. If he moves this way two more times, what is the total number of steps he will take?

6. Map A has 7 horizontal streets and 8 vertical streets. Map B has 6 horizontal streets and 9 vertical streets. Which map has more intersections? Explain.

Name _____ Date _____

Extension
Lesson 9

Writing Number Sentences for Intersecting Lines

Draw a map to match the number sentences. Fill in the missing numbers.

1

□ + □ = 9 lines

□ × □ = 18 intersections

2

□ + □ = 9 lines

□ × □ = 20 intersections

3

□ + □ = 9 lines

□ × □ = 14 intersections

4

□ + □ = 10 lines

□ × □ = 24 intersections

5

□ + □ = 10 lines

□ × □ = 16 intersections

6

□ + □ = 10 lines

□ × □ = 21 intersections

Name _____ Date _____

Extension
Lesson 10

Breaking Products into Factors

Draw a map to match the number sentences.
Fill in the missing numbers.

1

$\square + \square = 11$ lines

$\square \times \square = 10$ intersections

2

$\square + \square = 11$ lines

$\square \times \square = 18$ intersections

3

$\square + \square = 11$ lines

$\square \times \square = 24$ intersections

4

$\square + \square = 11$ lines

$\square \times \square = 0$ intersections

5

$\square + \square = 11$ lines

$\square \times \square = 28$ intersections

6

$\square + \square = 11$ lines

$\square \times \square = 30$ intersections

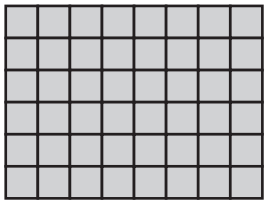
Name _____ Date _____

Extension
Lesson 11

Separating Arrays

Each array was cut into four parts. The number of tiles in each part were added together to find the total number in the array. Draw lines to show how the array was cut, and fill in the blanks.

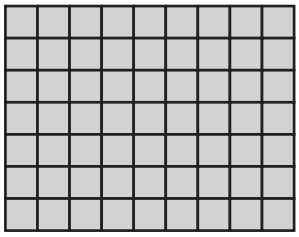
1



$20 + 12 + 10 + \square = \square$

(4×5)

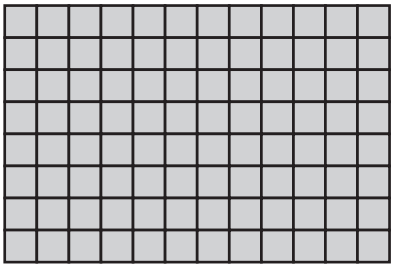
2



$16 + 20 + \square + 15 = \square$

(4×4)

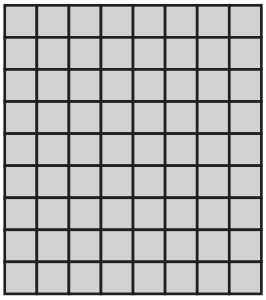
3



$32 + 16 + \square + 16 = \square$

(4×8)

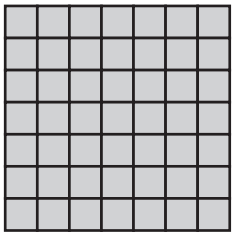
4



$9 + \square + 18 + 30 = \square$

(3×3)

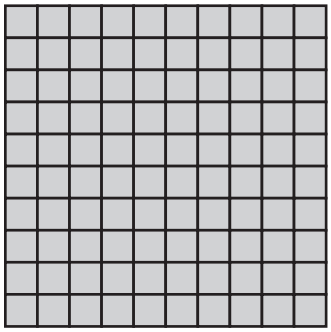
5



$\square + 12 + 12 + 9 = \square$

(4×3)

6



$28 + \square + 12 + 18 = \square$

(7×4)