Name _____ Date _____ Class _____

Additional Practice

Investigation 2

Prime Time

1. Alicia has made a rectangle using 24 square tiles. If she adds the length and width of her rectangle together, she gets 11. What is the length and width of Alicia's rectangle? Explain your reasoning.

2. Jennifer has made a rectangle using 48 square tiles. If she adds the length and width of her rectangle together she gets a prime number. What is the length and width of Jennifer's rectangle? Explain your reasoning.

3. List all of the factor pairs for each of the following numbers.

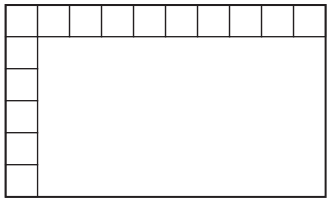
a. 56 **b.** 42 **c.** 31 **d.** 80 **e.** 75 **f.** 108 **g.** 225

4. Phillip is thinking of a number that is less than 20 and has three factor pairs. Phillip also says that if he adds together the factors in the factor pairs he gets 19, 11, and 9. What is Phillip's number? Explain how you found your answer.

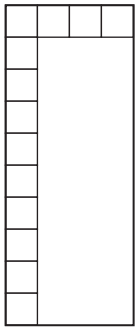
Additional Practice *(continued)*

5. In each of the rectangles shown below, only the tiles along the length and width are shown. For each rectangle, explain how many square tiles it would take to make each rectangle.

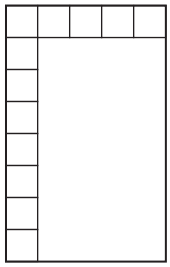
a.



b.



c.



6. a. Draw and label a Venn diagram in which one circle represents the factors of 12 and another circle represents the factors of 13. Place the numbers from 1 to 15 in the appropriate regions of the diagram.

b. What do you notice about the numbers in the intersection? Why does this happen?

c. What is another set of labels, one for each of the two circles, that gives the same numbers in the intersection as you found in part (b)? Explain your reasoning.

7. a. Draw and label a Venn diagram in which one circle represents the multiples of 5 and another circle represents the multiples of 2. Place the numbers from 1 to 40 in the appropriate regions of the diagram.

b. What do you notice about the numbers in the intersection? Why does this happen?

c. Where would you place 75 in the diagram? Where would you place 90? Explain your reasoning.

8. Karl added four numbers together and got an even sum. Three of the numbers are 42, 35, and 77. What can you say about the fourth number? Explain your reasoning.