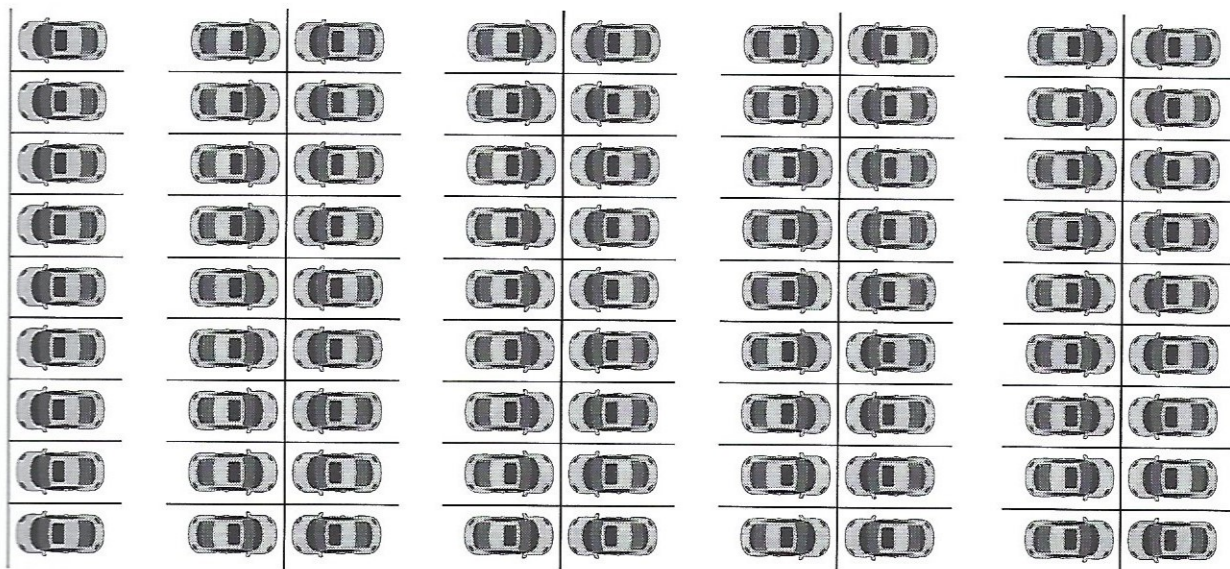


LESSON 1.1 PRACTICE

Factor Pairs and Multiples

Directions: Complete the problems below.

1. Sara said that the number of cars in the parking lot is a prime number, because there are an odd number of cars. Aaron disagreed and said that the number of cars in the parking lot is a composite number because they can be arranged in different arrays. The cars in the parking lot are parked like this:



- a. Who is correct? _____
- b. How do you know?

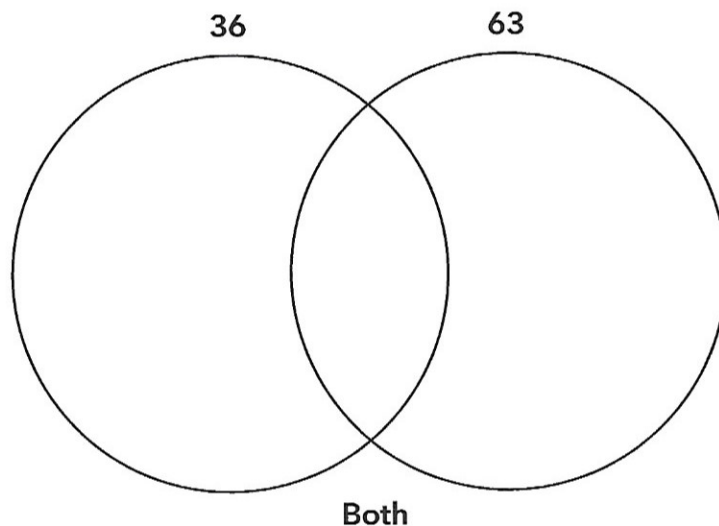
- c. How many other ways could the cars be parked to form a rectangular array?

- d. What is the minimum number of cars that would need to be added to make the number of cars in the parking lot a prime number? How do you know?

2. Tic-Tac-Tile Company is designing a kitchen for the Browning family. The Brownings have purchased enough tiles for an area of 72 square feet for their kitchen.
- Draw all possible array designs the Brownings could use for their kitchen, if each tile measures 1 foot by 1 foot. Use a separate sheet of paper to draw your arrays.
 - The Brownings would like a kitchen that is as close to a square as possible. Which design should the Brownings choose? Explain your reasoning.
 - If the Brownings wanted to change their kitchen from "close to a square" to an exact square, how many square feet would their new kitchen have if they did not want to buy more tile, yet want to keep the size as close as possible to 72 square feet? Use both words and pictures to explain your answer.
3. Write all of the factor pairs for the numbers listed below.

36, 63

- Use the Venn diagram to record all factors of 36 and 63.



- b. Using the factors of 36 and 63 from the Venn diagram in Part B, generalize a rule for multiples of the number 9.
4. Test your generalizations with numbers.
- a. Is this true for 9×11 ? 9×12 ? 9×13 ? What can you say about your generalizations based on these numbers?
- b. Look at the multiples of 3, 4, and 6 to see if you can develop any other generalizations regarding multiples of these numbers.
5. Multiple madness: For the following questions, answer with the number that applies to the statement listed.
- a. Which number between 1 and 100 has only 10 fours? _____
- b. Which number between 1 and 100 has only 3 sixes? _____
- c. Which number between 1 and 100 has only 9 nines? _____
- d. Create your own multiple madness question to give to a friend.

Extend Your Thinking

1. Draw two cards from a set of number cards and compare the factor pairs of the two numbers to see if you can generalize any rules for multiples that have not been generalized already.

LESSON 1.1

Common Core Assessment Practice

Directions: Complete the problems below.

- Mr. Beasley is buying pretzels for his snack machines. Each machine can hold 9 packs of pretzels. Assuming all of his machines are out of pretzels, which could be the total number of pretzel packs Mr. Beasley is buying?
 - 40
 - 85
 - 63
 - 56

- Use the list of numbers below to answer the question. Which of the numbers listed are prime? Circle them.

0, 1, 2, 3, 5, 6, 8, 9, 18, 23, 32, 49, 81, 87, 89, 99

- Which of the following is a multiple of 4?
 - 90
 - 64
 - 34
 - 14

- Which number below has these factor pairs?

3 and 15, 5 and 9

 - 45
 - 50
 - 36
 - 30