



LESSON 19

Tile Connect It

Your Challenge

- **Keiko, Luke, Jamal, and Mia have different numbers of algebra tiles. Use the clues to determine how many tiles each student has.**

Here are the clues:

- Keiko has the same number of x tiles and $\frac{1}{4}$ as many 1 tiles as Luke does.
- Luke has 3 times as many x tiles and 3 times as many 1 tiles as Jamal does.
- Jamal has half as many x tiles and 4 more 1 tiles as Mia does.
- Mia has 4 times as many 1 tiles as x tiles. She has the following number of 1 tiles:

1 1 1 1 1 1 1 1

- **Use each student's tiles to make the puzzle on the next page true.**

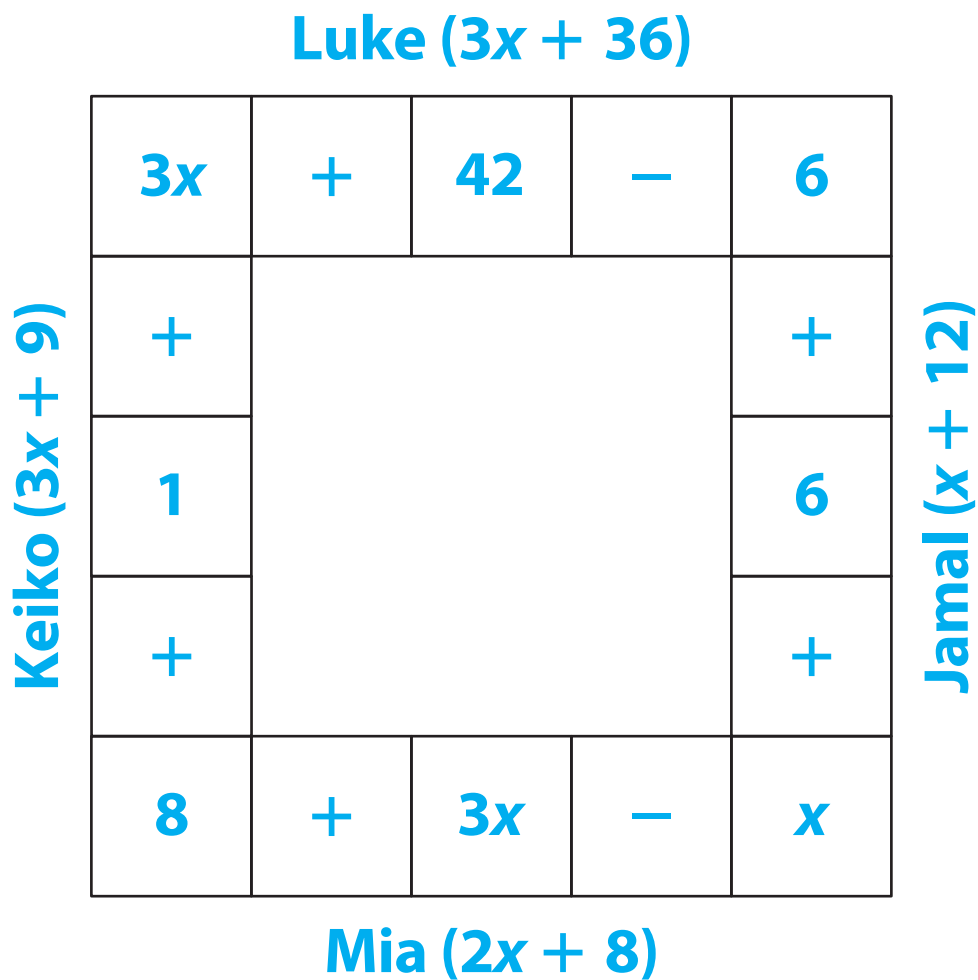
Use these rules:

- Write four expressions, one for each student's tiles. These will be each student's original expression.
- Each side of the square represents one student's tiles. Each expression in the puzzle should have three terms. This will require writing new expressions that are equivalent to the original expressions. For example, if an original expression is $2x + 8$, you can rewrite this using three terms as $2x + 5 + 3$ or $x + x + 8$.
- You may use any operation. You must use at least two operations within the puzzle. For example, you cannot use only addition.
- The last term in each equivalent expression is the first or last term of a connecting equivalent expression.
- After you complete the puzzle, label each side with the appropriate student's name and that student's original expression.



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Original Expressions:Keiko: $3x + 9$ _____Luke: $3x + 36$ _____Jamal: $x + 12$ _____Mia: $2x + 8$ _____**Possible answers:**



LESSON 21

Number Fit

Your Challenge

- For each puzzle, fill in each blank with the numbers 0–9 so each equation is true. Use these rules to fill in the blanks:

- Use only the numbers 0 to 9.
- Use each number only once.

It may help to write the digits 0–9 on small squares of paper so they can be moved around as you solve the puzzles.

1 Possible answers:

$$j = \boxed{6}$$

$$k = \boxed{1}$$

$$j + \boxed{9} = 15$$

$$\frac{k}{\boxed{4}}(32) = 8$$

$$j^2 + \boxed{7} = 43$$

$$\boxed{5} \cdot j = 30$$

$$\boxed{3} - k = \boxed{2}$$

$$j + \boxed{8} - 14 = \boxed{0}$$



LESSON 21

Number Fit

2 Possible answers:

$$x = \boxed{7}$$

$$y = \boxed{4}$$

$$x + 8 = \boxed{1} \boxed{5}$$

$$2y^2 = \boxed{3} \boxed{2}$$

$$5(y + 8) = \boxed{6} \boxed{0}$$

$$14x = \boxed{9} \boxed{8}$$