

# Expression vs. Equation

An expression in math is a sentence containing numbers and the operations. Below are examples of expressions:

$2 + 3$

$17 - 16 + 2$

$\frac{2}{5} \times \frac{6}{6}$

$6$

$(3 \times 5) - (6 \times 2)$

$y - 20$

An equation is the statement of numbers, expressions, operations that are equal.  
Examples:

$2 + 3 = 4 + 1$

$17 - 16 + 2 = 3$

$\frac{2}{5} \times \frac{6}{6} = \frac{12}{30}$

$6 = 6$

$(3 \times 5) - (6 \times 2) = 15 - 12$

$y - 20 = 10 + x$

Look at the statements below. Write "ex" if the statement is an expression.  
Write "eq" if the statement is an equation.

\_\_\_\_\_  $7 + f$

\_\_\_\_\_  $6x - 6y - 6z$

\_\_\_\_\_  $12(7 - 3)$

\_\_\_\_\_  $\frac{(40 - 5)}{7} = 5$

\_\_\_\_\_  $(6 \times 4) = (3 \times 8)$

\_\_\_\_\_  $8$

\_\_\_\_\_  $(5 \times 5 \times 5)$

\_\_\_\_\_  $0.1 + 0.5 = 0.3 + 0.3$

\_\_\_\_\_  $\frac{9}{2} \times \frac{4}{3} = 6$

\_\_\_\_\_  $(2 \times 2) - (1 \times 1)$

## Challenge

Complete the equation by writing the expression on the other side of equation. See the example.

$60 + 4 = \underline{8 \times 8}$

$25 - 15 = \underline{\hspace{2cm}}$

$4 \times 2 = \underline{\hspace{2cm}}$

$\frac{12}{4} = \underline{\hspace{2cm}}$

# Writing Expressions With Variables #1

An expression in math is a sentence containing numbers and the operations. Below are examples of expressions:

$$2 + 3$$

$$17 - 16 + 2$$

$$\frac{2}{5} \times \frac{6}{6}$$

$$6$$

$$(3 \times 5) - (6 \times 2)$$

$$y - 20$$

A variable represents the unknown number in the expression or equation. For example,  $4 \times t = 12$ . The letter "t" represents the number which multiplies by 4 to equal 12.

Read the sentences below and write an expression. See the example.

Robin has 10 chocolates and Martin has  $m$  chocolates. Write an expression of chocolates that Martin and Robin have together.

Robin has 10  
Martin has  $m$

The expression is  $10 + m$



Bobby grows 20 carrots and Tommy grows  $k$  carrots. Write the expression of carrots that both Bobby and Tommy have.



Julie has 7 jelly beans. She gave  $y$  jelly beans to Susie. Write the expression of jelly beans that she has left.



Sally ate 2 pieces of cake in the morning and  $n$  pieces in the evening. Write the expression for the amount of cake she had today.



Ronny had 12 paper clips. He lost  $p$  of them. Write the expression of paper clips Ronny has left.



# Writing Expressions With Variables #2

An expression in math is a sentence containing numbers and the operations. Below are examples of expressions:

$$2 + 3$$

$$17 - 16 + 2$$

$$\frac{2}{5}x$$

$$6$$

$$(3x) - (6x + 2)$$

$$y - 20$$

A variable is a letter ( $x$ ,  $y$ ,  $t$ , etc.) that represents the unknown number in an expression or equation. When a variable is next to a number, it means multiply. For example:  $4t = 12$  means 4 multiplied by  $t$  equals 12.

Read the sentences below and write an expression. See the example below.

There are  $y$  letters in the bag. They are divided into 4 equal groups. Write an expression of the letters after dividing.

Number of letters is  $y$   
Divided into 4

The expression of division is  $\frac{y}{4}$



There are 20 people in the room. They are divided into  $m$  equal groups. Write the division expression of the number of people in each group.



Ashley has 25 flowers. The number of flowers Sam has is  $z$  times more than what Ashley has. Write a multiplication expression of flowers that Sam has.



A piece of wood is 20 feet long. It was cut into  $k$  equal pieces to make a track. Write a division expression of the length of each piece of wood.



Mary has  $p$  handbags. Lynn has 2 times more than Mary. Write the multiplication expression of the handbags that Lynn has.



# Algebraic Expressions

Simplify the following expressions.

1.)  $5a + 6a =$

2.)  $3a + a =$

3.)  $8a - 3a =$

4.)  $10a - 2a =$

5.)  $9a + 4a =$

6.)  $11a - 7a =$

7.)  $4b + 3b =$

8.)  $12b - 6b =$

9.)  $5b + 9b =$

Complete the following expressions.

1.)  $12 \times 3 - 5 + 4 =$

2.)  $4 + 7 \times 2 - 8 =$

3.)  $5 - 7 + 2 \times 10 =$

4.)  $15 \div 3 + 8 \times 5 =$

5.)  $11 \times 3 - 12 \div 4 =$

6.)  $5 + 9 - 16 \div 2 =$

Combine like terms to simplify the following expressions.

1.)  $3a(a + 4) - 2a + 7 =$

2.)  $5a + 3a - 15 \div 3 =$

3.)  $4(3 + 9) + 10a - 4a =$

4.)  $(21 \div 7)(4a + a) - 12 =$

5.)  $17 + 4(3 + a) - a =$

6.)  $10a - 4a + 27 \div 3 =$

# Algebra Action!

## Value of The Expression

A variable represents the unknown number in the expression or equation.  
For example,  $4 \times t = 12$ . The letter "t" represents the number which multiplies by 4 to equal 12.

An expression in math is a sentence containing numbers and the operations. Below are examples of expressions:

$2 + 3$

$17 - 16 + 2$

$\frac{2}{5}x$

$6$

$(3 \times 5) - (6 \times 2)$

$y - 20$

We can find the value of the expression  $7 + y$  by placing the variable with the number.  
For example: if  $y = 5$

1. Put 5 in the place of y

$7 + y$

$7 + 5$

2. Calculate it

$7 + 5 = 12$

Find the value of the expressions below. Show your work.

$17 - h$

If  $h = 4$

$4 + y + 7$

If  $y = 8$

$(12 - b) + 5$

If  $b = 3$

$(5 \times m) + 1$

If  $m = 6$

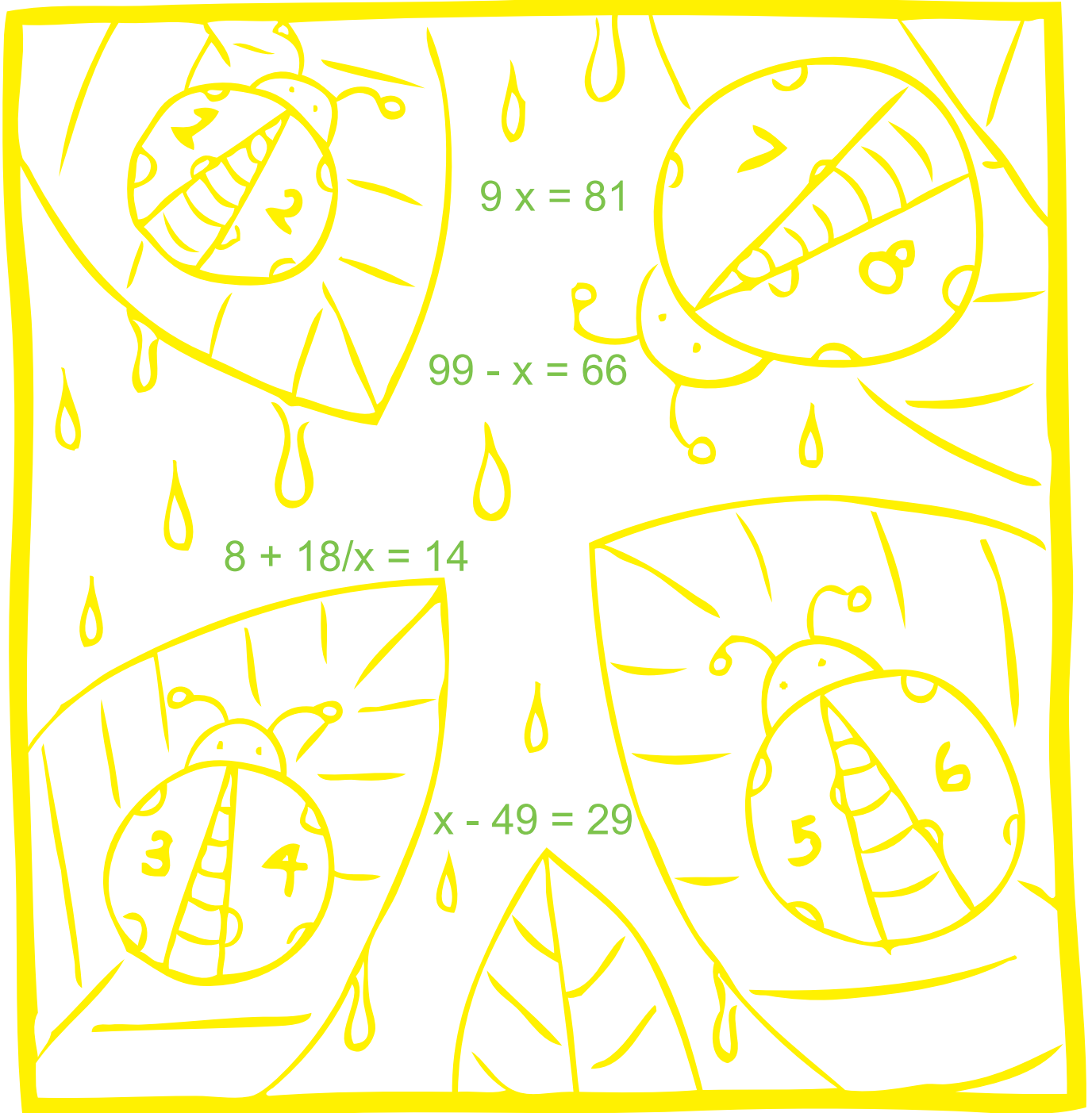
$(4 \times p) \times 2$

If  $p = 10$

$20 + (6 \times w)$

If  $w = 3$

# Ladybug Math

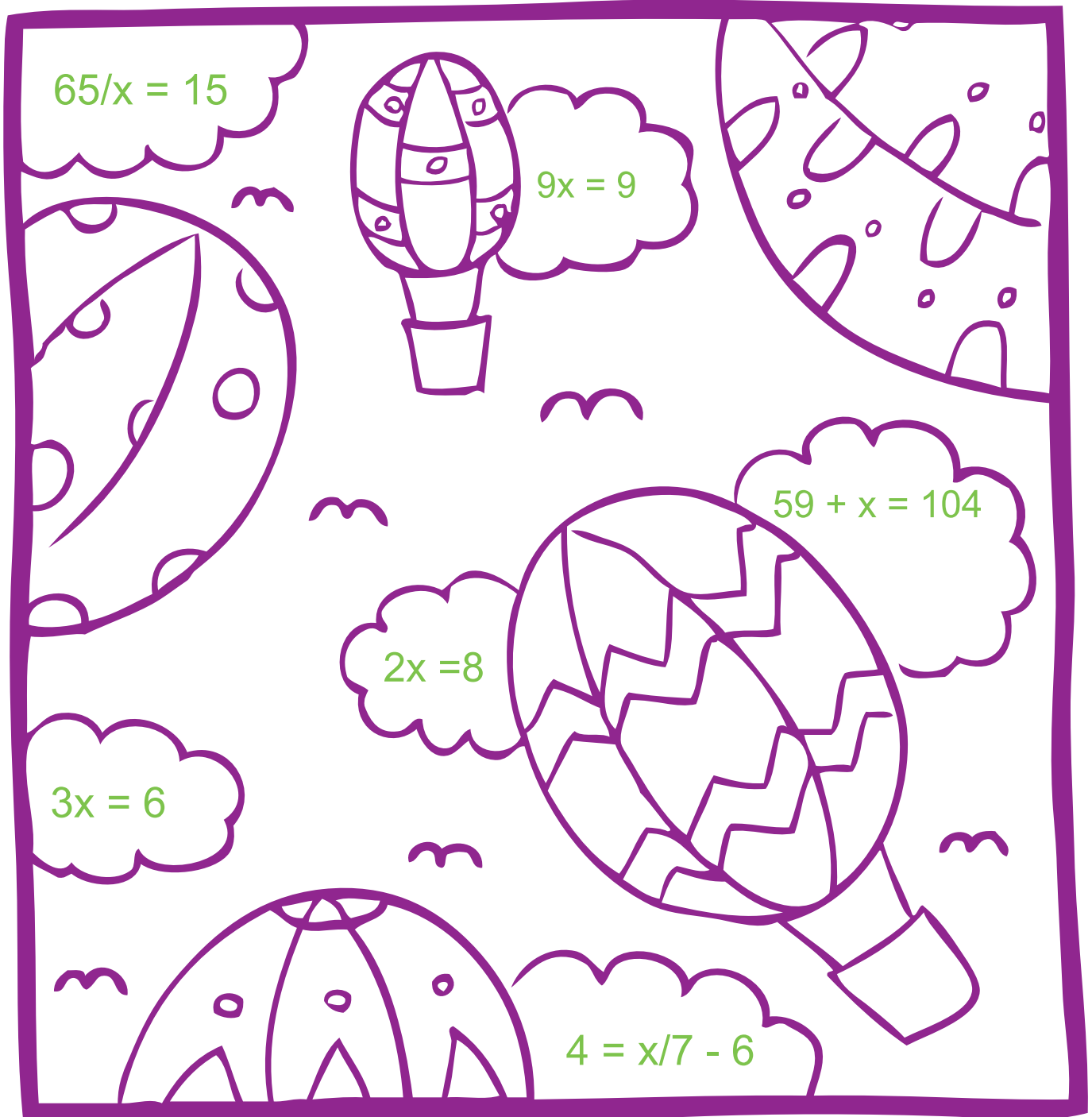


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# Air Balloon Math

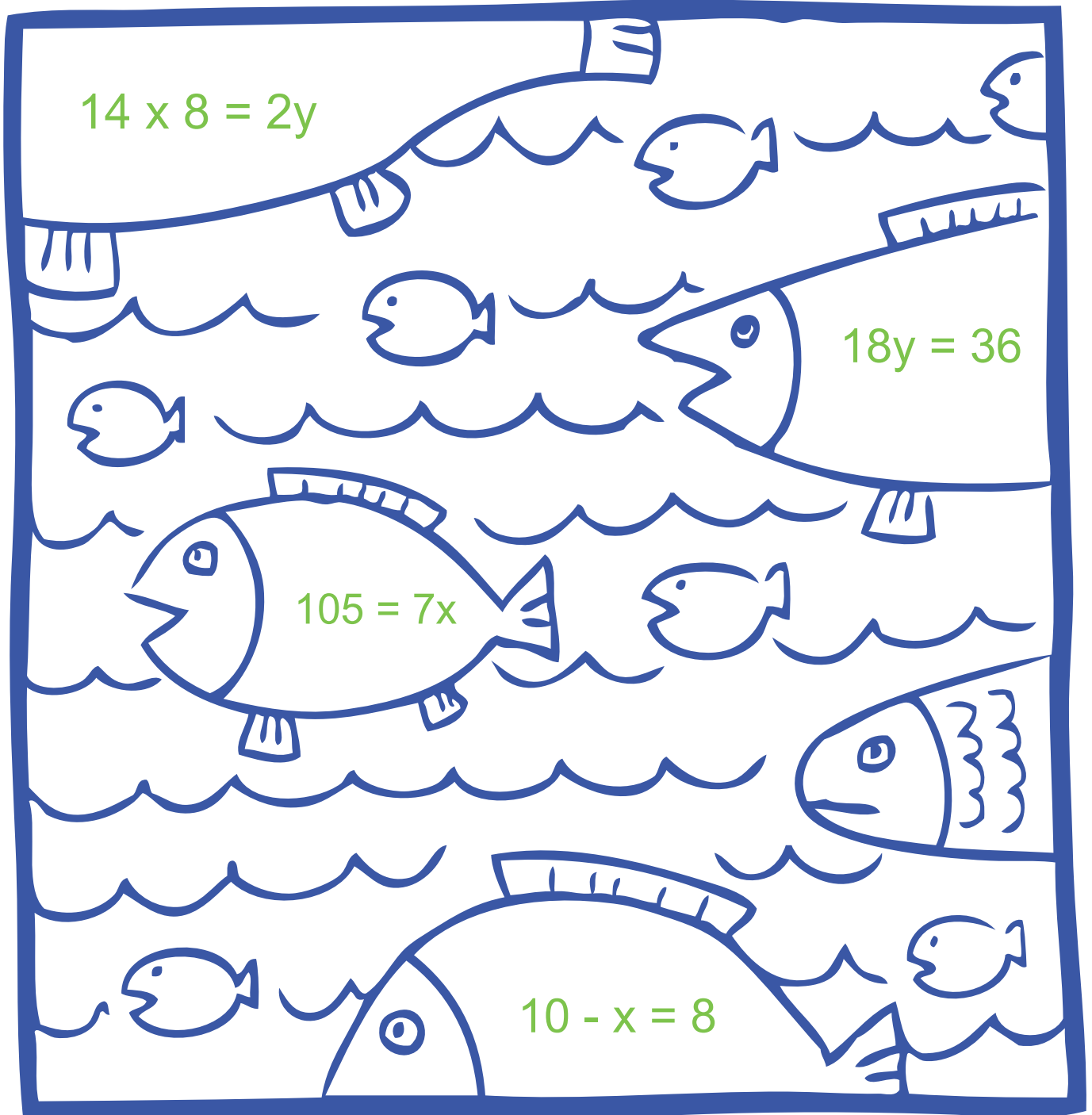


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# Fish Math



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