1 - 1 Letters and Math Sentences
Math Sentences that Use Variables (1)

Example The formula to calculate the area of a rectangle is width multiplied by length. A 5 cm wide tape is cut into several pieces. Write a math sentence for the area of this rectangular tape when the length is x cm long. Calculate the area when $x = 30$.

In a math sentence, x is a variable. It is a letter that represent any number.

5 cm

x cm

If the length is 10 cm, the area is $5 \times 10 = 50$ (cm^2)
If the length is 15 cm, the area is $5 \times 15 = 75$ (cm^2)
If the length is 20 cm, the area is $5 \times 20 = 100$ (cm^2)
If the length is 25 cm, the area is $5 \times 25 = 125$ (cm^2)
If the length is x cm, the area is $5 \times x$ (cm^2)

Answer $\underline{\quad 5 \times x \ (cm^2) \quad}$

When x is 30 cm, the area is $\underline{\quad 150 \ cm^2 \quad}$

1 The letter x is used in math to mean a value is not yet known. It is called a "variable". Let's practice writing x.

$x \quad x \quad x \quad x \quad x \quad x$

2 The formula to calculate the area of a parallelogram is the base multiplied by the height. The parallelogram has a base of 4 cm and a height of x cm. Write a math sentence for the area. Calculate the area when $x = 6$ cm.
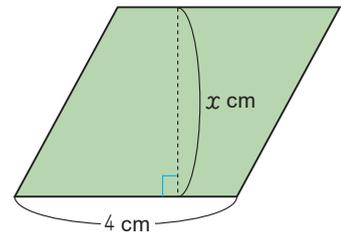
Answer $\underline{\qquad\qquad}$

When $x = 6$, the area is $\underline{\qquad\qquad}$

x cm

4 cm

3 1.8 L of juice is shared equally among x amount of people. How much juice will each person get? Write a math sentence for the word problem. Calculate the amount of juice when $x = 9$.

Answer $\underline{\qquad\qquad}$

When x is 9, the amount of juice is $\underline{\qquad\qquad}$

APPLE JUICE

1

Math Sentences that Use Variables (2)

Example A parallelogram has a base of x cm, a height of 6 cm and an area of y cm². Write the math sentence for the word problem. Calculate y if $x = 5$ cm. Since the formula for a parallelogram is base multiplied by the height, the math sentence is:

If the base is 1 cm, the area is $\quad 1 \times 6 = 6$ (cm²)
If the base is 2 cm, the area is $\quad 2 \times 6 = 12$ (cm²)
If the base is 3 cm, the area is $\quad 3 \times 6 = 18$ (cm²)
If the base is 4 cm, the area is $\quad 4 \times 6 = 24$ (cm²)
If the base is x cm, the area is $\quad x \times 6 = y$ (cm²)

Answer $\quad x \times 6 = y$ $\qquad$ When $x = 5$, y is $\qquad$ 30

1 The letter y is also used in math to mean a value is not yet known. It is also called a variable. Let's practice writing y.

$y \quad y \quad y \quad y \quad y \quad y$

2 A rectangle has a length of x cm and a width of 8 cm. It has an area of y cm². Write the math sentence for the word problem. Calculate the area y when $x = 4$ cm.

Answer _____ $\qquad$ When $x = 4$, y is _____

3 The formula for the circumference of a circle is the diameter multiplied by 3.14. A circle has a diameter of x cm and circumference of y cm. Write the math sentence for the circumference. Calculate the circumference y when $x = 10$ cm.

Answer _____ $\qquad$ When $x = 10$, y is _____

4 There was 2 L of juice. I drank x L. There is y L of juice left. Calculate the amount of juice left, y when $x = 0.6$ L.

Answer _____ $\qquad$ When $x = 0.6$, y is _____

How to Read Math Sentences

Example Write a word problem that fits the following math sentence.

$$20 + x = y$$

Answer (Example) I have 20 pencils. My mother bought x more pencils for me. Now I have a total of y pencils.

1 Match the word problem with the math sentence. Write the letter in the ☐.

① $80 + x = y$ ☐

② $80 - x = y$ ☐

③ $80 \times x = y$ ☐

④ $80 \div x = y$ ☐

(a) There is a rectangle with an area of 80 cm^2 and the length of x cm. The width is y cm.

(b) My father weighs 80 kg and I weigh x kg. Both of us together weigh y kg.

(c) I had 80 pieces of paper. Because I used x pieces, I have only y pieces left.

(d) There are x marbles. Each of marble weighs 80 g. The total weight of all the marbles is y g.

2 Write a word problem that matches the math sentence.

① $x + 30 = y$

_____

② $x - 30 = y$

_____

③ $x \times 30 = y$

_____

④ $x \div 30 = y$

_____

1 - 4 Letters and Math Sentences

Review

1 Write a math sentences for the following word problems.

1 2.4 L of milk is divided into x glasses equally. How much milk does each glass contain?

Answer _____

2 My older sister is x years old. My younger sister is 7 years old. What is the difference between their ages?

Answer _____

3 A triangle has a base of 3 cm and a height of x cm. What is the area of this triangle?

Answer _____

2 Calculate the following problems.

1 One orange weighs 0.2 kg. The box weighs 0.6 kg. How much does the box weigh when x oranges are put into the box? Write the math sentence to calculate the box's total weight.

Answer _____

2 If there are 10 oranges into a box, what is the total weight?

Answer _____

3 If there are 20 oranges into a box, what is the total weight?

Answer _____

3 Write the math sentence for the word problem.

1 There were x pencils to be shared equally among 4 students. Each student received y pencils.

Answer _____

2 There are 20 questions on a math practice sheet. I already solved x questions. I have y questions left.

Answer _____

4

3 There are x cans of juice. Each can contains 240 mL. The total amount of juice is y mL.

Answer _____

4 x kg of sand is put into a container that weighs 0.3 kg. The total weight is y kg.

Answer _____

4 There are 6 marbles. One marble weighs x g. Six marbles weight y g.

1 Write a math sentence showing the relationship between x and y.

Answer _____

2 When $x = 6.5$, what is y?

Answer _____

3 When $y = 26.4$, what is x?

Answer _____

5 Match the word problem with the math sentence. Write the letter in the ☐.

1 $50 + x = y$ ☐   **2** $50 - x = y$ ☐

3 $50 \times x = y$ ☐   **4** $50 \div x = y$ ☐

(a) There are 50 pieces of paper. x pieces have been used. There are y pieces of paper left.

(b) My school rented school buses for a trip. Each bus has 50 seats. The school rented x buses. y students can attend the trip.

(c) There is a rectangle flowerbed with an area of 50 m^2 and the length of x m. The width of this flowerbed is y m.

(d) There are 50 male students and x female students. y is the total number of students.