

Lesson 16: Write Expressions in Which Letters Stand for Numbers

Classwork

Opening Exercise

Underline the key words in each statement.

- The sum of twice b and 5
- The quotient of c and d
- a raised to the fifth power and then increased by the product of 5 and c
- The quantity of a plus b divided by 4
- 10 less than the product of 15 and c
- 5 times d and then increased by 8

Mathematical Modeling Exercise 1

Model how to change the expressions given in the Opening Exercise from words to variables and numbers.

- The sum of twice b and 5
- The quotient of c and d
- a raised to the fifth power and then increased by the product of 5 and c
- The quantity of a plus b divided by 4

- e. 10 less than the product of 15 and c
- f. 5 times d and then increased by 8

Mathematical Modeling Exercise 2

Model how to change each real-world scenario to an expression using variables and numbers. Underline the text to show the key words before writing the expression.

Marcus has 4 more dollars than Yaseen. If y is the amount of money Yaseen has, write an expression to show how much money Marcus has.

Mario is missing half of his assignments. If a represents the number of assignments, write an expression to show how many assignments Mario is missing.

Kamilah's weight has tripled since her first birthday. If w represents the amount Kamilah weighed on her first birthday, write an expression to show how much Kamilah weighs now.

Nathan brings cupcakes to school and gives them to his five best friends, who share them equally. If c represents the number of cupcakes Nathan brings to school, write an expression to show how many cupcakes each of his friends receive.

Mrs. Marcus combines her atlases and dictionaries and then divides them among 10 different tables. If a represents the number of atlases and d represents the number of dictionaries Mrs. Marcus has, write an expression to show how many books would be on each table.

To improve in basketball, Ivan's coach told him that he needs to take four times as many free throws and four times as many jump shots every day. If f represents the number of free throws and j represents the number of jump shots Ivan shoots daily, write an expression to show how many shots he will need to take in order to improve in basketball.

Exercises

Mark the text by underlining key words, and then write an expression using variables and/or numbers for each statement.

1. b decreased by c squared

2. 24 divided by the product of 2 and a

3. 150 decreased by the quantity of 6 plus b

4. The sum of twice c and 10

5. Marlo had \$35 but then spent $\$m$.

6. Samantha saved her money and was able to quadruple the original amount, m .

7. Veronica increased her grade, g , by 4 points and then doubled it.

8. Adbell had m pieces of candy and ate 5 of them. Then, he split the remaining candy equally among 4 friends.

9. To find out how much paint is needed, Mr. Jones must square the side length, s , of the gate and then subtract 15.

10. Luis brought x cans of cola to the party, Faith brought d cans of cola, and De'Shawn brought h cans of cola. How many cans of cola did they bring altogether?

Problem Set

Mark the text by underlining key words, and then write an expression using variables and numbers for each of the statements below.

1. Justin can type w words per minute. Melvin can type 4 times as many words as Justin. Write an expression that represents the rate at which Melvin can type.
2. Yohanna swam y yards yesterday. Sheylin swam 5 yards less than half the amount of yards as Yohanna. Write an expression that represents the number of yards Sheylin swam yesterday.
3. A number d is decreased by 5 and then doubled.
4. Nahom had n baseball cards, and Semir had s baseball cards. They combined their baseball cards and then sold 10 of them.
5. The sum of 25 and h is divided by f cubed.