Primary Type: Tutorial

Direct Link: https://www.khanacademy.org/math/algebra/introduction-to-algebra/variable-and-expressions/v/evaluate-a-formula-using-substitution

How to evaluate an expression using substitution

In this example we have a formula for converting Celsius temperature to Fahrenheit. Let's substitute the variable with a value (Celsius temp) to get the degrees in Fahrenheit. Great problem to practice with us!

General Information

Subject(s): Mathematics
Grade Level(s): 9, 10, 11, 12
Intended Audience: Educators , Students

Suggested Technology: Computers for Students, Internet Connection, Speakers/Headphones

Keywords: evaluate, Equations, Variables, Substitution, rational Coefficient, Multiplying fractions

Instructional Component Type(s): Tutorial

Resource Collection: Secondary Math specific existing tutorials

Source and Access Information

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Access Privileges: Public
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Aligned Standards

Name	Description
MAFS.6.EE.2.5:	Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true.
	Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities. a. Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$, where p, q, and r are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach. For example, the perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width? b. Solve word problems leading to inequalities of the form $px + q > r$ or $px + q < r$, where p, q, and r are specific rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem. For example: As a salesperson, you are paid $50 per week plus $3 per sale. This week you want your pay to be at least $100. Write an inequality for the number of sales you need to make, and describe the solutions.

MAFS.7.EE.2.4:	**Clarifications:** **Fluency Expectations or Examples of Culminating Standards** In solving word problems leading to one-variable equations of the form px + q = r and p(x + q) = r, students solve the equations fluently. This will require fluency with rational number arithmetic (7.NS.1.1–1.3), as well as fluency to some extent with applying properties operations to rewrite linear expressions with rational coefficients (7.EE.1.1). **Examples of Opportunities for In-Depth Focus** Work toward meeting this standard builds on the work that led to meeting 6.EE.2.7 and prepares students for the work that will lead to meeting 8.EE.3.7.
MAFS.912.A-CED.1.1:	Create equations and inequalities in one variable and use them to solve problems. Include equations arising from linear and quadratic functions, and simple rational, absolute, and exponential functions. ★