**Content:** Solving one-variable word problems using several methods

**Instructor:**

**Materials:** Expressions and Equations Worksheet (attached)

**Objective(s):** Participants will be able to 1) use several different methods to solve real world problems. While there are several methods that will ensure the correct answer, algebraic equations should be introduced and emphasized.

**CCSS Content**

[CCSS.Math.Content.6.EE.A.2](http://www.corestandards.org/Math/Content/6/EE/A/2/)  
Write, read, and evaluate expressions in which letters stand for numbers.

[CCSS.Math.Content.6.EE.A.2.c](http://www.corestandards.org/Math/Content/6/EE/A/2/c/)  
Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in real-world problems. Perform arithmetic operations, including those involving whole-number exponents, in the conventional order when there are no parentheses to specify a particular order (Order of Operations). *For example, use the formulas V = s3 and A = 6 s2 to find the volume and surface area of a cube with sides of length s = 1/2*.

[CCSS.Math.Content.6.EE.B.6](http://www.corestandards.org/Math/Content/6/EE/B/6/)  
Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.

[CCSS.Math.Content.7.EE.B.4](http://www.corestandards.org/Math/Content/7/EE/B/4/)  
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.

[CCSS.Math.Content.7.EE.B.4.a](http://www.corestandards.org/Math/Content/7/EE/B/4/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?*

**CCSS Practice:**

1, 2, 6, 7, 8

**Warm-Up:** (for CAMP) – What’s the rule?

“What’s My Function?” (As the three days progress, different ways of playing “What’s My Function?” will be introduced. This is the simplest way to play.)

Here are three different rules. Have the class give the instructor the input and the instructor respond with the output. Participants should write down the rule as soon as they think they have it. They should also write down how many input/outputs it took to determine the rule.

1) (easy) y = x +3….

Example: Participant 1: Six

Instructor: Nine

Participant 2: Five

Instructor: Eight

Etc….

2) y = 2x – 5

3) y = + 1.5

**Lesson Body:** Equations and Expressions Activity (see attached)

**Closing (for CAMP):** Discussion on this lesson including 1) how it could be improved via UDL 2)how it could be improved for teachers’ student make-up 3) how CCSS/SMP(s) were addressed.

**Assessment:** Exit ticket Make your own grade level appropriate real world problem. Solve in two different ways.