High Leverage Assessment - 7 (Expressions & Equations)

Teacher Note

Please consider:
- Administering the entire grade level HLA three times a year (sometime during the months of September, January, and May).

- Only assign tasks that can be completed in one sitting (i.e., assign half the tasks on one day and the remaining tasks on another day).

- Remind students to show their thinking using models, numbers and/or words.

- Some students may not be ready to solve specific tasks. Please allow them to move on to the next question.

- Over time, you should see progress in the complexity of the strategies and/or models that all students use to demonstrate their mathematical thinking.

Purpose - To Share with Students

"This assessment provides evidence of your growth throughout the school year.

In order to see growth, we have to know how you are thinking about these problems each time you see them. That means that we need to see your thinking in words, models, or numbers.

The strategies that you use to make sense of these problems is what demonstrates growth and is therefore most important to us.

You may use the tools that are always available to you in our classroom, but not a calculator or computer.

I may tell you to move on to another problem if I see sufficient evidence of your strategy. I may also ask a question to better help me understand your strategy. You may or may not have time to finish."

High Leverage Assessment

Name:_____   Teacher:_____   Date:_____

1. Sam, Jayden and Erica each wrote an equation. Determine whether each equation is true.
   If it's true, show or explain how you know.
   If it's false, change one part of the equation to make it true.

   Jayden said that -10 + 3 = -7

   Sam said that -5 - (-2) = -7

   Erica said that -4 - 3 = -7

High Leverage Assessment

Name:_____   Teacher:_____   Date:_____

2. Using only the numbers below, make four <u>different</u> true equations.

$$2 \qquad -3 \qquad -6 \qquad -12$$

a) ☐ × ☐ = ☐

b) ☐ × ☐ = ☐

c) ☐ ÷ ☐ = ☐

d) ☐ ÷ ☐ = ☐

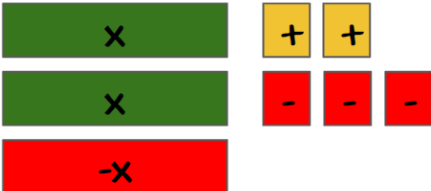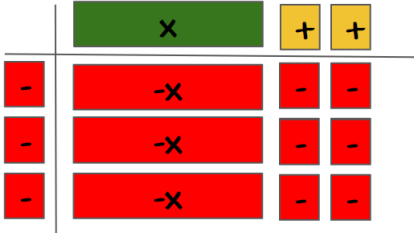Prove that one of the above equations is true using a visual representation.

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Name:_____   Teacher:_____   Date:_____

Fill in the missing boxes in the chart

Expression	Model	Equivalent Expression
2x + -3 + -x + 2	[model: two green "x" bars, one red "-x" bar; two yellow "+" tiles, three red "-" tiles]	
2(-3x + 4)		
	[area model: green "x" bar, two yellow "+" tiles across top; three red "-" tiles down the side; rows of red "-x" bars and red "-" tiles]	
		-x + 4