

PROBLEM-OF-THE-DAY: ALGEBRA 1

WEEK: September 4 to September 7

DAY: Wednesday

RISD Objective: Provided an algebraic expression with multiple operations (including absolute value operations), students will be able to evaluate that expression when given numerical values for the variables.

PROBLEM #12

Mr. Smith hired Billy to mow his lawn within two days of the 15th day of each month. $|d - 15| \leq 2$ describes the days of the month

Billy can mow Mr. Smith's lawn according to their agreement. The variable, d , is a day of the month (e.g., for July 4th or August 4th, $d=4$). Find which days of the month Billy can mow Mr. Smith's lawn by completing the columns of the table below.

Date	d	$ d - 15 \leq 2$	Simplify	Simplified	Valid Date?
July 11 th	11	$ 11 - 15 \leq 2$	$ -4 \leq 2$	$4 \leq 2$	NO
July 12 th					
July 13 th					
July 14 th					
July 15 th					
July 16 th					
July 17 th					
July 18 th					
July 19 th					

MODEL SOLUTION #12

Date	d	$ d - 15 \leq 2$	Simplify	Simplified	Valid Date?
July 11 th	11	$ 11 - 15 \leq 2$	$ -4 \leq 2$	$4 \leq 2$	NO
July 12 th	12	$ 12 - 15 \leq 2$	$ -3 \leq 2$	$3 \leq 2$	NO
July 13 th	13	$ 13 - 15 \leq 2$	$ -2 \leq 2$	$2 \leq 2$	YES
July 14 th	14	$ 14 - 15 \leq 2$	$ -1 \leq 2$	$1 \leq 2$	YES
July 15 th	15	$ 15 - 15 \leq 2$	$ 0 \leq 2$	$0 \leq 2$	YES
July 16 th	16	$ 16 - 15 \leq 2$	$ 1 \leq 2$	$1 \leq 2$	YES
July 17 th	17	$ 17 - 15 \leq 2$	$ 2 \leq 2$	$2 \leq 2$	YES
July 18 th	18	$ 18 - 15 \leq 2$	$ 3 \leq 2$	$3 \leq 2$	NO
July 19 th	19	$ 19 - 15 \leq 2$	$ 4 \leq 2$	$4 \leq 2$	NO

So, Billy can mow the lawn on any day from the 13th day of the month to the 17th day of the month.