PROBLEM-OF-THE-DAY: ALGEBRA 1

WEEK: September 10 to September 14 **DAY:** Friday

RISD Objective: Given a first-degree equation (or word problem which can be modeled by a first-degree equation), students will use the properties of equality to solve the equation.

PROBLEM #19

Marla is four years less than twice as old as Darla. If the sum of their ages is 47, how old is Marla? Explain and show your work.

MODEL SOLUTION #19

Since I know least about Darla, I will represent her age by the variable, "*d*". Since Marla is four years less than twice as old as Darla, her age can be represented by the expression 2d – 4. Algebraically speaking, I would write:

Let d = Darla's age
2d – 4 = Marla's age

Since the sum of their ages is 47, the equation involving the sum of their ages is

$$\begin{aligned} d + (2d - 4) &= 47 \\ 3d - 4 &= 47 \\ 3d &= 51 \\ d &= 17 \end{aligned}$$

So, Darla is 17. But Marla is 2d – 4, which is 2(17) – 4, which is 34 – 4 = 30.
Therefore, Marla is 30 years old.