

PROBLEM-OF-THE-DAY: ALGEBRA 1**WEEK:** September 10 to September 14 **DAY:** Monday

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 #15

Carrie has saved \$125 and will begin earning \$65 per week for a part time job she just started. She plans to save all the money she earns until she saves \$500.

Part 1:

- 1) Write an equation for Carrie's savings, S , as a function of weeks worked, W .**
- 2) How much will Carrie save after 4 weeks?**
- 3) How many weeks must Carrie work to save \$500?**

Part 2:

Suppose Carrie only saves 80% of her earnings.

- 1) Write a new equation for Carrie's savings as a function of weeks worked.**
- 2) How many weeks will Carrie have to work to save \$500?**

MODEL SOLUTION #15

Part 1:

$$1) S = 65W + 125$$

$$\begin{aligned} 2) S &= (65)(4) + 125 \\ &= 260 + 125 \\ &= \$385 \end{aligned}$$

Carrie will save \$385 after 4 weeks.

$$3) 500 = 65W + 125$$

$$375 = 65W$$

$$W = 375/65$$

$$W = 5.77 \text{ weeks}$$

Carrie will need to save for about six weeks.

Part 2:

$$1) S = (.80)(65)W + 125$$

$$S = 52W + 125$$

$$2) 500 = 52W + 125$$

$$375 = 52W$$

$$W = 375/52$$

$$W = 7.2 \text{ Weeks}$$

Carrie will need to save for over seven weeks.