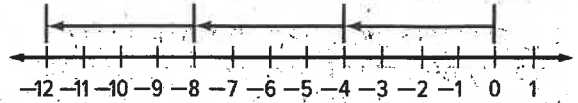# Lesson 4 Multi-Step Problem Solving

Multi-Step Example

Each time Min uses an ATM that belongs to a bank other than the one he has a checking account with, he is charged a fee. The number line shows his ATM fees for one month. Write a numerical expression that represents his ATM fees and explain the meaning. **7.NS.2, MP 4**

Ⓐ (−3)4; Min uses an ATM 4 times and is charged $3 for each use.

Ⓑ (−12)1; Min is charged $12 for 1 ATM use.

Ⓒ (−4)3; Min uses an ATM 3 times and is charged $4 for each use.

Ⓓ (−4)12; Min uses the ATM 12 times and is charged $4 for each use.

Use a problem-solving model to solve this problem.

1 Understand

Read the problem. Circle the information you know.
Underline what the problem is asking you to find.

2 Plan

What will you need to do to solve the problem? Write your plan in steps.

Step 1   Determine the direction of the arrows.

Step 2   Determine the integer for each arrow.

3 Solve

Use your plan to solve the problem. Show your steps.

Since the arrows are going to the _____ the integers represented

are _____. There are three arrows that each represent _____.

$(-4) \cdot 3 =$ _____

So, Min used the ATM 3 times and was charged $4 each time.

The correct answer is ___. Fill in that answer choice.

> **Read to Succeed!**
> There are three groups of equal arrows. These three groups represent the three fees.

4 Check

How do you know your solution is accurate?

_____

_____

Lesson 4 *(continued)*

Use a problem-solving model to solve each problem.

1 The table below shows the descent of an airplane. Use the data in the table to find the rate of descent in feet per minute. Assume the plane continues to descend at a constant rate. Write a multiplication expression that represents how far the plane has descended in 7 minutes and find the product. **7.NS.2, MP 7**

Distance (ft)	Minutes
−1,200	1
−2,400	2
−3,600	3
−4,800	4

Ⓐ (−1,200)7; −8,400 feet

Ⓑ (−2,400)7; −16,800 feet

Ⓒ (−1,400)7; −9,800 feet

Ⓓ (−1,371)7; −9,600 feet

2 Olivia is playing a trivia game where you gain points for each right answer and lose points for each wrong answer. Some questions are worth 3 points and some questions are worth 5 points. Olivia gets four 3-point questions right and three 3-point questions wrong. She gets three 5-point questions right and two 5-point questions wrong. How many points does she have? **7.EE.3, MP 2**

_____

3 Jose drives a limousine and he wants to calculate his profit at the end of the day. He spent money on gasoline but made money on trips. He bought 14 gallons worth of gasoline at $4 per gallon. He drove customers 75 miles and charged them a rate of $5 per mile. How much profit did he make, in dollars, at the end of the day? **7.EE.3, MP 4**

_____

4 ✋ H.O.T. Problem Tom multiplies 5 negative integers. Is the product positive, negative, or zero? Explain and include an example. Then write a general rule about the product of negative numbers. **7.NS.2a, MP 8.**

_____
_____
_____
_____