PROBLEM SOLVING WORKSHOP
LESSON 6.3

Using ALTERNATIVE METHODS

TEKS a.6, A.7.A, A.7.B

Another Way to Solve Example 5, page 371

MULTIPLE REPRESENTATIONS In Example 5 on page 371, you saw how to solve a problem about buying gasoline using an inequality. You can also solve the problem by working backward or by using a graph.

PROBLEM

CAR WASH Use the sign shown. A gas station charges $.10 less per gallon of gasoline if a customer also gets a car wash. What are the possible amounts (in gallons) of gasoline that you can buy if you also get a car wash and can spend at most $20?

METHOD 1

Work backward One alternative approach is to work backward.

STEP 1 **Read** the problem. It gives you the following information:

- amount you can spend: up to $20
- price of a car wash: $8
- regular price per gallon of gasoline: $2.09
- discount per gallon of gasoline when you get a car wash: $.10

Because you are getting a car wash, gasoline costs $2.09 − $.10, or $1.99, per gallon.

STEP 2 **Work** backward.

- Start with the amount you have to spend: $20.
- Subtract the cost of a car wash: $20 − $8 = $12.
- Make a table of values showing the amount of money you have left after buying various amounts of gasoline.

Gasoline (gal)	Amount of money left	
0	$12.00	
1	$10.01	− $1.99
2	$8.02	− $1.99
3	$6.03	− $1.99
4	$4.04	− $1.99
5	$2.05	− $1.99
6	$.06	− $1.99

▶ You can buy up to slightly more than 6 gallons of gasoline.