Problem of the Week
Problem B and Solution
Grocery Shopping

Problem

A family of five is planning on having a special meal for lunch, while sticking to a $30 budget. The three children (Sean, Siobhan, Saorise) are each to propose a menu for the lunch. Each menu is to consist of a main dish, along with a vegetable side and a dessert. When answering the questions that follow, use the tables of items and prices per item below.

(a) Sean's menu has wraps made up of chicken fingers, lettuce, tomatoes, and mayonnaise. He chooses celery for his vegetable side and apples for dessert. Does his menu cost less than $30? If it does not, how can he change his menu so it costs less than $30?

(b) Siobhan's menu has sandwiches made up of bread, cold cuts, cheese, mayonnaise, and mustard. She chooses carrots for her vegetable side and apple pie for dessert. Does her menu cost less than $30? If it does not, how can she change her menu so that it costs less than $30?

(c) Saorise would like to have two different options for the main part of the meal, along with one option for the vegetable side and one option for the dessert. Help her make a menu from the items below, without exceeding $30.

Main Dish Items	
Item	**Price**
Bread	$2.98
Chicken Fingers	$7.99
Cold Cuts	$6.99
Hot Dogs	$3.49
Hot Dog Buns	$2.99
Pasta	$1.99
Pasta Sauce	$2.98
Wraps	$2.99
Cheese	$4.98

Condiments	
Item	**Price**
Ketchup	$3.99
Mayonnaise	$3.59
Mustard	$4.49
Relish	$3.49

Vegetables	
Item	**Price**
Carrots	$2.99
Celery	$2.99
Cucumbers	$1.79
Lettuce	$1.97
Tomatoes	$1.49

Dessert	
Item	**Price**
Apples	$3.99
Apple Pie	$5.99
Bananas	$1.45
Cookies	$2.99
Ice Cream	$2.98

Solution

(a) The total cost for Sean's menu is
$\$2.99 + \$7.99 + \$1.97 + \$1.49 + \$3.59 + \$2.99 + \$3.99 = \$25.01$. This menu does not exceed $30.

(b) The total cost for for Siobhan's menu is
$\$2.98 + \$6.99 + \$4.98 + \$3.59 + \$4.49 + \$2.99 + \$5.99 = \$32.01$. This menu does exceed $30 by $2.01.

There are many options to change the menu so that cost does not exceed $30. For example, removing either mayonnaise or mustard will make the cost less than $30. Or she could have bananas for dessert instead of apple pie.

(c) Answers will vary. One possible main dish could be hot dogs with hot dog buns, ketchup, and mustard, which would cost
$\$3.49 + \$2.99 + \$3.99 + \$4.49 = \$14.96$. Another main dish could be pasta with pasta sauce, which would cost $\$1.99 + \$2.98 = \$4.97$. She could have cucumbers for her vegetable side and ice cream for dessert. The total cost for this menu is $\$14.96 + \$4.97 + \$1.79 + \$2.98 = \$24.70$.