Computer Programming

Chapter 4 Sample Test Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  | Open the project **Ch. 4 Sample\_Test\_Code\_Blank 2016** for the **BHS**\_**Coding** folder in the **X:** drive and save it into your **H:** drive. |  |
| --- | --- | --- |
|  | The classes Ingredient, Recipe, and RecipeDemo are ready for you to make changes.  Put your name and the date in the appropriate comments at the top of each class’s code. |  |
|  | Take a look at the fields of Recipe and Ingredient. Note that Recipe has a name and an ArrayList of Ingredients. Ingredients have a name, an amount, and a boolean field (stores whether or not that ingredient needs to be bought at the store or not). |  |
| 1) | Write a method in the Recipe class called printIngredientList that prints out all of the details of all the ingredients in the ingredientList.  Hint: the Ingredient class has a toString method that will make this exercise much easier. |  |
| 2) | Write a method in the Recipe class called shoppingList that makes an ArrayList of items that need to be bought before making the recipe and returns that list. |  |
| 3) | Add code to the RecipeDemo class that tests the printIngredientList and shoppingList.  Make sure to print out the returned ArrayList from the shoppingList method to see whether the returned value is correct. |  |
| 4) | Write a method called randomIngredient in the Recipe class that returns a single random ingredient using the Random class. |  |
| 5) | Write a method called findIngredient in the Recipe class to search for an ingredient by name from the ingredientList. Have this method return that ingredient.  If the ingredient does not exist, print an error message and return null; |  |
|  | **Short Answer Questions:** |  |
| 6) | Write a for-next loop that prints the perfect squares from 100 down to 1 |  |
| 7) | **ArrayLists:**  a) Suppose that an object is stored at index 8 in a collection. What will be its index immediately after the objects 2, 3, 9, and 10 are removed?  b) Write a method call to remove the fifth object stored in a collection called menu. |  |
| 8) | Write the code to define and create an ArrayList object that is a collection of Fruit objects |  |
| 9) | What is an ArrayList? Give an example (not from this sample test) of what an ArrayList could be useful for. |  |
| 10) | Write out what the following code will print:  int a = 2;  int b = 3;  while(a < 10)  {  b = a + b;  a++;  System.out.println(a + “, “ + b);  } |  |