

2. A coffee shop sells small, medium, and large cups of coffee. Over a given week, the shop keeps track of how many of small, medium, and large coffees it sells. The shop stores this data in a two-dimensional array with each column corresponding to a day of the week and each row corresponding to small, medium, and large sized coffees respectively. Below is an example of the two-dimensional array for a given week.

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Small	7	8	12	6	15	7	11
Medium	16	18	21	18	17	22	15
Large	13	12	14	15	11	9	12

The two-dimensional array, along with the prices for each size of coffee, is stored in a `coffeeShop` class. The partial declaration for the `coffeeShop` class is shown below.

```
public class coffeeShop
{
    /** price of a small coffee */
    private final double smallPrice = 2.00;

    /** price of a medium coffee */
    private final double mediumPrice = 3.25;

    /** price of a large coffee */
    private final double largePrice = 4.50;

    /** Constructs a coffeeShop object with a 2-D array of quantity of cups sold */
    public coffeeShop(int[][] cupsSold)
    {/** implementation not shown */}

    /** Returns the total number of coffees sold on a certain day of the week */
    public int cupsSoldOnDay(int dayIndex)
    {/** to be implemented in part (a) */}

    /** Returns the coffee shop's net income over the week */
    public double netIncome()
    {/** to be implemented in part (b) */}

    // There may be instance variables, constructors, and methods that are not shown.
}
```

(a) Write the `coffeeShop` method `cupsSoldOnDay`, which returns the total number of coffee cups sold on a certain day of the week. The `cupsSoldOnDay` method accepts an integer between 0 and 6 parameter that corresponds to a certain day of the week. 0 would correspond to Monday and 6 would correspond to Sunday.

Complete method `cupsSoldOnDay` below.

```
/** Returns the total number of coffee cups sold on a certain day
 * @param dayIndex the integer between 0 and 6 that represents a day of the week
 * @return A integer representing the total number of coffee cups sold on a certain day
 */
public int cupsSoldOnDay(int dayIndex)
```

(b) Suppose the coffee shop sells each cup of coffee for 25% more than the actual cost to make the cup. Write the `CoffeeShop` method `netIncome`, which returns the net amount of income that the coffee shop makes from selling coffee over the entire week. Note that the net income for a single cup is equal to the price of the cup minus the cost to make the cup.

Complete method `netIncome` below.

```
/** Returns the net income of the coffee shop for the entire week
 * @return A double representing the net income that the coffee shop earns over the week
 */
public double netIncome()
```