

**1. Write a Java method to find the smallest number among three numbers.**

Input the first number: 25

Input the Second number: 37

Input the third number: 29

Expected Output: The smallest value is 25.0

**2. Write a Java method to display the middle character of a string.**

Note: a) If the length of the string is odd there will be two middle characters.

b) If the length of the string is even there will be one middle character.

Input a string: 350

Expected Output: The middle character in the string: 5

**3. Write a Java method to count all vowels in a string.**

Input the string: Education

Expected Output: Number of Vowels in the string: 5

**4. Write a Java method to count all words in a string.**

Input the string: The quick brown fox jumps over the lazy dog.

Expected Output: Number of words in the string: 9

**5. Write a Java method to compute the future investment value at a given interest rate for a specified number of years.**

Sample data (Monthly compounded) and Output:

Input the investment amount: 1000

Input the rate of interest: 10

Input number of years: 5

Expected Output:

Years	FutureValue
1	1104.71
2	1220.39
3	1348.18
4	1489.35
5	1645.31

**6. Write a Java method to find all twin prime numbers less than 100.**

Expected Output:

(3, 5)

(5, 7)

(11, 13)

(17, 19)

(29, 31)

(41, 43)

(59, 61)

(71, 73)

7) The Java class called `Holiday` is started below. An object of class `Holiday` represents a holiday during the year. This class has three instance variables:

- `name`, which is a `String` representing the name of the holiday
- `day`, which is an `int` representing the day of the month of the holiday
- `month`, which is a `String` representing the month the holiday is in

```
public class Holiday {  
    private String name;  
    private int day;  
    private String month;  
    // your code goes here  
}
```

**a)** Write a constructor for the class `Holiday`, which takes a `String` representing the name, an `int` representing the day, and a `String` representing the month as its arguments, and sets the class variables to these values.

**b)** Write a method `inSameMonth`, which compares two instances of the class `Holiday`, and returns the Boolean value `true` if they have the same `month`, and `false` if they do not.

**c)** Write a method `avgDate` which takes an array of base type `Holiday` as its argument, and returns a `double` that is the average of the `day` variables in the `Holiday` instances in the array. You may assume that the array is full (i.e. does not have any `null` entries).

**d)** Write a piece of code that creates a `Holiday` instance with the name "Independence Day", with the day "4", and with the month "July".