```java
package Assignment;

public class FirstAssignment {
	public static void main(String[] args) {
		// TODO Auto-generated method stub
		// 1. Printing even numbers from 2 to 50
		System.out.println("1. Even numbers from 2 to 50:");
		for (int i = 2; i <= 50; i += 2) {
			System.out.print(i + " ");
		}
		System.out.println("\n");

		// 2. Printing square of numbers from 1 to 10
		System.out.println("2. Square of numbers from 1 to 10:");
		for (int i = 1; i <= 10; i++) {
			System.out.println(i + "^2 = " + (i * i));
		}
		System.out.println();

		// 3. Calculating sum of first 50 numbers
		int sum = 0;
		for (int i = 1; i <= 50; i++) {
			sum += i;
		}
		System.out.println("3. Sum of first 50 numbers: " + sum + "\n");

		// 4. Printing multiplication table for 17
		System.out.println("4. Multiplication table of 17:");
		for (int i = 1; i <= 10; i++) {
			System.out.println("17 x " + i + " = " + (17 * i));
		}
		System.out.println();

		// 5. Printing reverse numbers from 20 to 1
		System.out.println("5. Reverse numbers from 20 to 1:");
		for (int i = 20; i >= 1; i--) {
			System.out.print(i + " ");
		}
		System.out.println("\n");

		// 6. Printing factorial of a number (e.g. 5)
		int num = 5;
		long fact = 1;
		for (int i = 1; i <= num; i++) {
			fact *= i;
		}
		System.out.println("6. Factorial of " + num + " is: " + fact + "\n");

		// 7. Checking if a number is prime (e.g. 29)
		int checkNum = 29;
		boolean isPrime = true;
		if (checkNum < 2) isPrime = false;
		else {
			for (int i = 2; i <= Math.sqrt(checkNum); i++) {
				if (checkNum % i == 0) {
					isPrime = false;
					break;
				}
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59                      }
60                  }
61                  System.out.println("7. Is " + checkNum + " a prime number? " + isPrime + "\n");
62
63                  // 8. Printing pyramid pattern
64                  System.out.println("8. Pyramid pattern:");
65                  int rows = 5;
66                  for (int i = 1; i <= rows; i++) {
67                      for (int j = i; j < rows; j++) {
68                          System.out.print(" ");
69                      }
70                      for (int k = 1; k <= i; k++) {
71                          System.out.print("* ");
72                      }
73                      System.out.println();
74                  }
75                  System.out.println();
76
77                  // 9. Printing diamond shape using * sign
78                  System.out.println("9. Diamond shape:");
79                  int n = 5;
80                  // Upper half
81                  for (int i = 1; i <= n; i++) {
82                      for (int j = i; j < n; j++) System.out.print(" ");
83                      for (int k = 1; k <= (2 * i - 1); k++) System.out.print("*");
84                      System.out.println();
85                  }
86                  // Lower half
87                  for (int i = n - 1; i >= 1; i--) {
88                      for (int j = n; j > i; j--) System.out.print(" ");
89                      for (int k = 1; k <= (2 * i - 1); k++) System.out.print("*");
90                      System.out.println();
91                  }
92                  System.out.println();
93
94                  // 10. Fibonacci series up to 10 terms (starting 1, 2, 3, 5...)
95                  System.out.println("10. Fibonacci series (10 terms):");
96                  int a = 1, b = 2;
97                  System.out.print(a + " " + b + " ");
98                  for (int i = 3; i <= 10; i++) {
99                      int c = a + b;
100                     System.out.print(c + " ");
101                     a = b;
102                     b = c;
103                 }
104                 System.out.println("\n");
105
106                 // 11. Counting total digits in a number (e.g. 6785)
107                 int number = 6785;
108                 int count = 0, temp = number;
109                 while (temp > 0) {
110                     count++;
111                     temp /= 10;
112                 }
113                 System.out.println("11. Total digits in " + number + " = " + count + "\n");
114
115                 // 12. Checking palindrome number (e.g. 121)
116                 int original = 121, reversed = 0, temp2 = original;
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117             while (temp2 != 0) {
118                 int digit = temp2 % 10;
119                 reversed = reversed * 10 + digit;
120                 temp2 /= 10;
121             }
122             System.out.println("12. Is " + original + " a palindrome? " + (original ==
123 
124             // 13. Sum of digits of number (e.g. 6785 = 6+7+8+5)
125             int digitSum = 0, temp3 = number;
126             while (temp3 != 0) {
127                 digitSum += temp3 % 10;
128                 temp3 /= 10;
129             }
130             System.out.println("13. Sum of digits of " + number + " = " + digitSum);
131         }
132     }
133 
134 
```