

- 1 Write a program that will use a `for` loop to print `Hello World!` ten times. (3)
- 2 Write a program that will use a `while` loop to print `Hello World!` ten times. (3)
- 3 Suppose that `i` and `j` are both of type `int`. What is the value of `j` after each of the following statements is executed? (5)
  - (a) `for (i = 0, j = 0; i < 10; i++) j += i;`
  - (b) `for (i = 0, j = 1; i < 10; i++) j += j;`
  - (c) `for (j = 0; j < 10; j++) j += j;`
  - (d) `for (i = 0, j = 0; i < 10; i++) j += j++;`
  - (e) `for (i = 0, j = 5; i < 10; j--) i += j;`
- 4 Write a program that will roll a random die until a 6 is rolled. Calculate and print the average number of rolls required over 1,000 trials. (5)
- 5 Write a program that, using one `for` loop and one `if` statement, prints the integers from 1,000 to 2,000 with five integers per line. (10)
 

**Hint:** Use the `%` operator.
- 6 *Prime Numbers.* Write a program that will find and print the first  $n$  prime numbers, where  $n$  is any given value such that  $0 \leq n \leq 1000$ . (20)