

Total = 28 points.

This assignment is practicing writing loops and decision statements. For each problem, you only need to write the code for the stated problem. That is, you do not need to write complete methods.

1. I have an array of 100 integers (data type `int`) called `a`. I want to know the sum of the first ten positions. Declare and initialize a local variable called `sum` and use a loop to calculate the sum of the first ten locations of the array `a`. [4 points]
2. Given the same array `a` in question 1, I want to multiply the values in the array, starting with the first location, until the product is greater than 1000. Declare a local variable called `product` and initialize it to 1 (**not to 0!**) and use a loop that will multiply successive array location until the product exceeds 1000. [4 points]
3. Given the same array `a` in question 1, I want to find the first position in the array that contains the number 20, and I know there is at least one location in the array that contains a 20. Declare a local variable called `answer`, and use a loop to look at each location until you find a 20. The loop should end when the first location containing 20 is found. After the loop, `answer` should contain the index of the location that contained the 20. [4 points]
4. Given the same array `a` in question 1, I want to find the first position in the array that contains the number 30, but this time I don't know for certain that there is a location containing the number 30. Declare a local variable called `answer` and use a loop to search for the number 30. After the loop ends, `answer` should either contain the index of the location that contained the first 30 or `answer` should contain a -1 if there was no 30 found in the array. [4 points]
5. Given the same array `a` in question 1, declare and initialize two local integer variables `sum1` and `sum2`. Using a loop `sum1` should be the sum of all the even array locations, including the first location and `sum2` should be the sum of all the odd array locations. Remember that you can use the remainder operator to determine if a number is even or odd. [4 points]
6. Given three integers `a`, `b`, and `c`, I want to divide `a` by `b` and assign the quotient to `c`, but only if `b` does not contain a 0. Use an `if` statement that will assign `c` the value of `a` divided by `b` if `b` is not 0 or assign `c` the value 0 if `b` is 0. [4 points]
7. I am writing a program that will play the card game blackjack (21). There is an internal method called `dealACard()` that I can call to have a card dealt; there is a `boolean` variable called `hitMe` that the player sets by clicking a button; and there is an `int` variable called `handValue` that is automatically updated by the `dealACard()` method. Write a loop that will call the method `dealACard()` as long as `hitMe` contains a true value and `handValue` is less than 21. [4 points]