**Conditionals**

1. We want to create a program that displays the letter grade for a student, given their grade in percentage, according to the following table:

|  |  |
| --- | --- |
| **Grade** | **Letter** |
| 90% – 100% | A |
| 80% – 89% | B |
| 70% – 79% | C |
| 60% – 69% | D |
| < 60% | F |

1. Write an algorithm that reads two triplets day1, month1, year1, and day2, month2, year2, representing two dates, and that determines whether the first date comes before the second.

1. Write an algorithm that reads three numbers and determines whether these numbers, considered as the lengths of the three sides of a triangle, would correspond to:

* An equilateral triangle (three equal sides)
* An isosceles triangle (two equal sides)
* A scalene triangle (three different sides)

1. An automobile insurance company wants to computerize the calculation of renewals for the premiums of its clients. The increase of a client’s premium is a function of the number of accidents, according to the table below:

|  |  |
| --- | --- |
| **Number of accidents** | **Increase** |
| 0 | 2% |
| 1 or 2 | 5% |
| 3 | 10% |
| 4 and more | 30% |

You are asked to create a program that calculates the new value of a premium, according to the old premium and the number of accidents.

1. In a competition where scores are given by 6 judges, a competitor’s final score is calculated as follows: first the highest and the lowest of the initial scores are eliminated, and then one takes the average of the other 4 scores. You are asked to create a program that reads 6 scores and determines the final score according to this method.

1. Write the algorithm of a program that reads a date (3 integers: day, month, year) and that displays the date of the next day (in numbers). Suppose that the year is not a leap year.

34 – Create an algorithm that determines whether a year provided by the user is a leap year. To be a leap year, a year must be divisible by 4 but not divisible by 100; despite this, if it is divisible by 400, it is a leap year after all.  
Example: 2000 is a leap year, but 1700, 1800, and 1900 are not.