Conditionals

Practice Problems
• Write the function \( \text{myAbs}(n) \) that, given an integer \( n \), returns the absolute value of \( n \)

• Examples:
  • \( \text{myAbs}(5) \) returns 5
  • \( \text{myAbs}(-4) \) returns 4
  • \( \text{myAbs}(0) \) returns 0
• Write the function \( \text{sign}(n) \) that implements the “signum” function. It should return -1, 0, or 1, depending on the sign of \( n \).

\[
\text{sgn } x := \begin{cases} 
-1 & \text{if } x < 0, \\
0 & \text{if } x = 0, \\
1 & \text{if } x > 0.
\end{cases}
\]
• Implement the function `middle(a, b, c)` that takes three different numbers as input, and returns the middle among them.
• Examples: `middle(7, 5, 6)` returns 6
• `middle(6, 7, 5)` returns 6
• `middle(100, 20, 45)` returns 45
• Implement the function `sumOfTwoDigits(n)` that computes the sum of
  the digits of a two-digit positive number.
• If the number has more than two digits or less than two digits or is
  negative, return -1
• Example: `sumOfTwoDigits(42) == 6`
• Example: `sumOfTwoDigits(9999) == -1`
• Example: `sumOfTwoDigits(-42) == -1`
• Tri-du is a card game inspired in the popular game of Truco. The game uses a normal deck of 52 cards, with 13 cards of each suit, but suits are ignored. What is used is the value of the cards, considered as integers between 1 to 13.

• In the game, each player gets three cards. The rules are simple:

  1. A Three of a Kind (three cards of the same value) wins over a Pair (two cards of the same value).
  2. A Three of a Kind formed by cards of a larger value wins over a Three of a Kind formed by cards of a smaller value.
  3. A Pair formed by cards of a larger value wins over a Pair formed by cards of a smaller value.

• Note that the game may not have a winner in many situations; in those cases, the cards are returned to the deck, which is re-shuffled and a new game starts.

• A player received already two of the three cards and knows their values. Your task is to write a program to determine the value of the third card that maximizes the probability of that player winning the game.

• Implement the function `bestCard(c1, c2)` that takes the values `c1` and `c2` of the two cards at hand, and returns the value of that card that will result in the best hand.