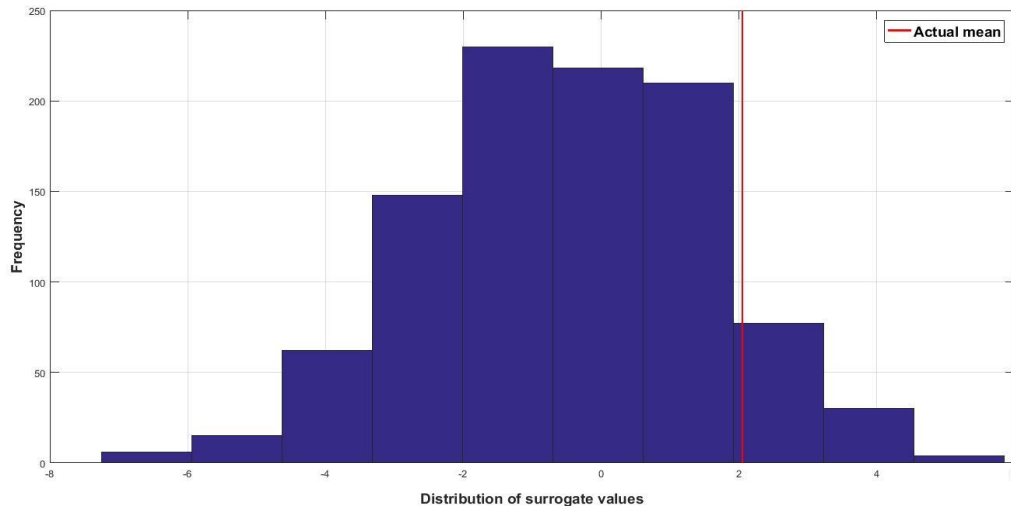**Function A)** a function that receives as input a vector and a value corresponding to the number of permutations. The function should then, at each permutation, randomly flip the sign of the values in the vector and compute the average of this surrogate vector.

Input vector: `A = [-10 5 4 8 9 2 2 11 16 7 -4 -6 7 -4 -5 -10 -20 12 1 16]`

Number of permutations: `num = 1000`

Output: distribution of the surrogates (histogram)
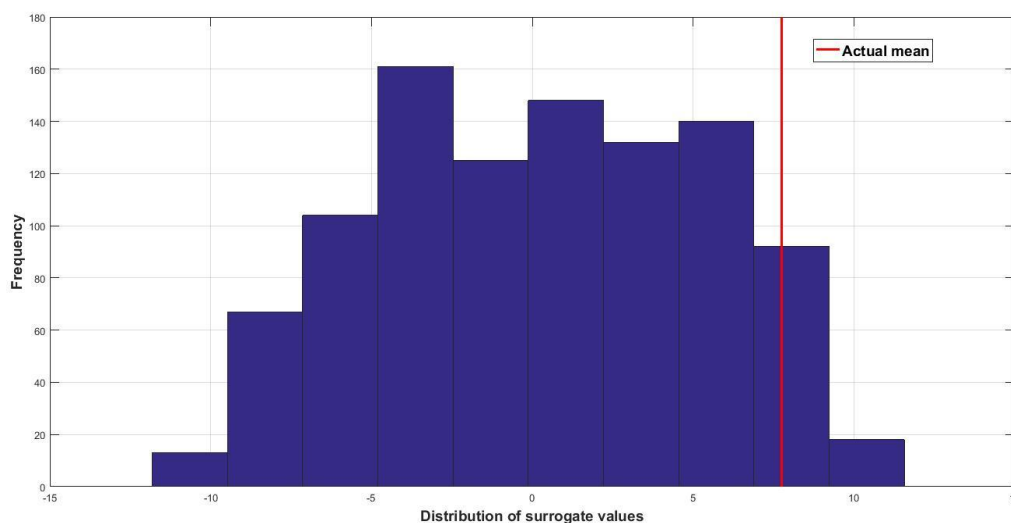

P-value: `p=0.1010`

Function B) similar than the function above, this function receives as input two vectors and a value corresponding to the number of permutations. The function should then, at each permutation, swap a subset of values between the two vectors and compute the mean difference.

Input vector A: `A=[5 -10 5 5  4 8 9 2 11 2 16 2 7 -4 3 7 15 33 31];`

Input vector B: `B=[1 15 -23 2 -6 9 1 3 -5 12 -4 -6 22 -15 -3];`

Number of permutations: `N = 1000;`

Output: distribution of the surrogates (histogram)

P-value: `p=0.0630`