1. We had used the assignment c[m] = c[m-1]*(n-m+1)/m in the code for computing

   all c[m] = C(n, m) for a fixed n and 2 <= m <= n (after initializing c[0] = 1 and c[1] = n).

   (i) Will the modified assignment c[m] = (n-m+1)*c[m-1]/m work?

   Is there any change in efficiency?

   (ii) Explain why c[m] = (n-m+1)/m*c[m-1] does not work. (Hint: try m = 2 for n = 5 and 6.)

   (iii) Explain why c[m] = c[m-1]/m*(n-m+1) does not work.

2. Consider the numbers C(n, m) in row n of PASCAL's triangle. Make a table with rows

   for n = 3, 4, 5, 6 and columns for SEven(n) and SOdd(n) which are defined by

   (i) SEven(n) = C(n, 0) + C(n, 2) + C(n, 4) + ... = sum of all C(n, m) for m even, i.e., m = 0, 2, 4, ...

   (ii) SOdd(n) = C(n, 1) + C(n, 3) + C(n, 5) + ... = sum of all C(n, m) for m odd, i.e., m = 1, 3, 5, ...

   Express each sum SEven(n) and SOdd(n) in the table as a power of 2. Based on this table,

   come up with two equations that you think will be true for all n.

More questions may follow.

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